APPENDIX I

Field Modification Forms

Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #1

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Michael Ritorto, RI Manager Date: 7/21/2016

Applicable section of SAP/SOP:

SAP Section 4.6.2: Operational Area Soil Investigation

Description of Modification:

The incremental soil samples collected from the 0.5 to 2 ft depth intervals will not be analyzed for volatile organic compounds (VOCs). This affects 43 sample locations where incremental soil samples are to be collected.

Preliminary - Under EPA and MDEQ Review

Rationale for Modifications / Potential Implications of Modifications:

As described in the SAP, the incremental soil sampling approach involves collection of aliquots of soil from 32 locations within each grid cell, followed by the compositing of the aliquots, then further processing prior to sampling the composited soil for laboratory analysis. This process will be performed at 43 grid cells that are part of the operational areas soil investigation. The compositing and processing of the sample would result in loss of any VOCs, if present; therefore, the VOC results for these samples would be meaningless and, accordingly, VOC analysis should not be performed.

The elimination of VOCs from this component of the investigation will not impact attainment of project objectives because there are approximately 15 soil borings across the operation area where VOCs will be collected from the 0.5 to 2 feet below ground surface and 10 to 12 feet below ground surface intervals. In addition, the soil vapor survey and monitoring wells both within and downgradient of the operational area will provide indications of any VOCs that would warrant further investigation.

The Standard Operating Procedure (SOP) 5.12 for Collection of Soil Samples for Laboratory Analysis using Incremental Sampling Methodology (ISM) was revised to include the sampling approach agreed upon by EPA, CDM Smith, and Roux, and as documented in Phase I SAP Field Modification #4.

Duration of Modification (Check one):

☐ Temporary

Date(s) _____

Sample Numbers Affected _____

☒ Permanent (Proposed Text Modification Section) Effective Date: 7/21/2016

Proposed Text Modifications in Associated Document:

The text modification is shown in red below.

Text from Section 4.2.6: Soil samples collected using ISM will be analyzed for the same analyses described in Section 4.6.1, including 20% of the surface samples sieved and analyzed for lead, with the exception that the ISM samples will not be analyzed for VOCs.

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

☒ **Not Applicable** ☐ **Reject** ☐ **Low Bias** ☐ **Estimate** ☐ **High Bias** ☐ **No Bias**

Roux Project Manager Approval: Andrew Baris Date: 7/21/2016
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9-7-16
(USEPA RPM or designate)

DATA QUALITY INDICATOR DEFINITIONS

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Low Bias – Samples associated with this modification form are useable, but results are likely to be biased low. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated low.

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #2

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Amy Hoffmann, Field Manager Date: 7/22/2016

Applicable section of SAP/SOP:

SAP Section 4.7: Monitoring Well Installation

Description of Modification:

Deep Monitoring Well CFMW-23a will not be installed. The boring for this location was drilled to a depth of 196 ft below land surface, and the well will not be installed for the reasons described below. Instead, the borehole will be grouted to land surface.

Preliminary - Under EPA and MDEQ Review

Rationale for Modifications / Potential Implications of Modifications:

During the drilling of the borehole for deep well CFMW-23a, bedrock was encountered at a depth of 148 ft. Cascade drilled approximately 33 ft into the rock, and no water bearing zones were encountered. Above the dry rock, the unconsolidated deposits in the boring were wet from 116 ft down to the top of the bedrock. Note that existing shallow well CFMW-23, which is the new identifier for TW-10, is located 15 ft from the borehole for CFMW-23a and is screened from 137.5 to 143.5 ft. CFMW-23 recently had a measured depth to water of 113, which is expected to decline as the dry weather season is encountered [note that depth to water was 125 ft in September 2013, during the USEPA site reassessment performed by Weston].

Based on these findings regarding the shallow depth to rock and the screen setting of the existing well; it is not appropriate to install a well at location CFMW-23a. Therefore, the boring will abandoned by grouting the borehole to land surface. The geologic log for CFMW-023a and a figure presenting the location of well CFMW-23 and borehole CFMW-23a with respect to local site features is attached to this modification form.

Duration of Modification (Check one):

[X] Temporary

Date(s) 6/20-21/2016

Sample Numbers Affected CFMW-23a

[ ] Permanent (Proposed Text Modification Section) Effective Date: _____

Proposed Text Modifications in Associated Document:

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[X] **Not Applicable** [ ] **Reject** [ ] **Low Bias** [ ] **Estimate** [ ] **High Bias** [ ] **No Bias**

Roux Project Manager Approval: Andrew Baris Date: 7/22/2016
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9-7-16
(USEPA RPM or designate)

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #3

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Amy Hoffmann, Field Manager Date: 7/21/2016

Applicable section of SAP/SOP:

SAP Section 4.7: Monitoring Well Installation

Description of Modification:

Deep Monitoring Well CFMW-016a will be constructed with a five-foot screen length, in lieu of a 10-foot screen length, installed from 121-126 feet below ground surface (ft bgs) for the reasons described below.

Preliminary - Under EPA and MDEQ Review

Rationale for Modifications / Potential Implications of Modifications:

During the drilling of the borehole for deep monitoring well CFMW-016a, an initial water bearing zone was encountered from 74 to 126 ft bgs. Beneath this zone a dry confining unit consisting primarily of sandy silt, with some fine gravel and clay, was encountered from a depth of 126 to 300 ft bgs where the boring was terminated. No water was observed from 126 to 300 ft bgs.

Based on these observations, the deep monitoring well will be constructed with a five-foot screen length installed from 121-126 ft bgs to ensure ample separation from the shallow monitoring well, CFMW-016, which will be installed with a 10-foot screen length from 85 to 95 ft bgs. Use of the 5-ft screen for the deep well (CFMW-16a) will allow for better characterization of vertical gradients at this well nest, as well as allow for assessment of groundwater quality conditions immediately atop the confining unit. A copy of the geologic boring log and monitoring well construction log for CFMW-016 and CFMW-016a are attached to this modification form.

Duration of Modification (Check one):

[X] Temporary
Date(s) 6/24/2016
Sample Numbers CFMW-016a

[ ] Permanent (Proposed Text Modification Section)
Effective Date: _____

Proposed Text Modifications in Associated Document:

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[X] **Not Applicable** [ ] **Reject** [ ] **Low Bias** [ ] **Estimate** [ ] **High Bias** [ ] **No Bias**

Roux Project Manager Approval: Andrew Baris Date: 7/21/2016
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9/7/2016
(USEPA RPM or designate)

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #4

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Preliminary - Under EPA and MDEQ Review

Requester: USEPA / CDM Smith Date: 7/21/2016

Applicable section of SAP/SOP:

SAP Section 4.6.2: Operational Area Soil Investigation

Description of Modification:

Field processing of soil samples collected using incremental sampling methodology (ISM) will be discontinued. Instead, the samples (approximately 1 kilogram bulk samples, comprised of 32 aliquots from each DU) will be shipped to Test America Laboratories where the samples will be pre-processed and prepared in accordance with their Standard Operating Procedure for ISM samples. In addition, it was agreed that moving forward the team will be using the "wedge" approach as described in the ISM guidance to obtain representative aliquots from the Geoprobe cores obtained at each of the 32 borings locations that make up each DU.

The "wedge" approach is defined in the ITRC February 2012 technical and regulatory guidance document titled "Incr*emental Sampling Methodology*" and discussed in detail in the Roux SOP 5.12 titled Incremental Soil Sampling. As written in the SOP, "soil should be collected using the "wedge" approach as described in the ITRC guidance. A wedge of soil must be taken from the entire length of the targeted depth interval. Target intervals to be collected will be pre-determined during the planning process. Removing a wedge of soil across the length of a larger core to encompass the entire depth interval rather than collecting the entire core depth interval as a whole, constitutes the mass of an individual increment of an ISM sample. Individual wedges, approximately 1 ounce each, from 30 or more separate DU cores are then collected to form the complete subsurface ISM bulk sample."

Rationale for Modifications / Potential Implications of Modifications:

Based upon observations conducted by CDM Smith oversight personnel, USEPA and CDM Smith were concerned that field sampling and processing of the ISM soil samples being conducted by Roux/Hydrometrics personnel was not in conformance with the ITRC ISM guidance referenced in the work plan. Specifically, CDM Smith personnel were concerned over the possibility for a potential bias because the field processing did not include drying and breaking up of soil aggregates, and sieving, as would be done in the lab processing of ISM samples. CDM Smith was concerned not only that there may be a potential bias introduced by field processing, but that smaller soil particles may have settled upon hand mixing the soil, or that subsamples were not collected in accordance with ITRC ISM guidance resulting in a sample not representative of the specified sampling area.

15 of 43 Decision Unit (DU) grids had been sampled using the field processing approach that will be discontinued. It was agreed that Roux/Hydrometrics would resample three of the DUs (i.e., 20 percent resampling) using the wedge sampling and laboratory processing approach described above. This resampling will allow comparison of the results from the two methods, and for assessment of whether or not the initial sampling approach could have resulted in a low or high bias relative to the sampling and processing methods to be followed henceforth. As requested by CDM Smith, the specific grids to be resampled will be:

- Grid 2 – Encompasses the south part of the former drum storage area where passive soil gas sampling indicated the presence of contamination.
- Grid 6 – Located down gradient of the wet scrubber sludge pond and the location of the previously collected DUP and MS/MSD samples.
- Grid 8 – Located down gradient of the east landfill leachate pond.

Preliminary - Under EPA and MDEQ Review

Duration of Modification (Check one):

[ ] Temporary
Date(s) _____
Sample Numbers _____

[X] Permanent (Proposed Text Modification Section) 7/21/2016
Effective Date: _____

Proposed Text Modifications in Associated Document:

This form serves to document the change as described above, no document revisions are proposed.

Any future SAPs proposing to use ISM sampling will specifically detail field sampling and lab processing techniques in conformance with changes described above. The Roux SOP 5.12 Incremental Soil Sampling, and any future SOPs referencing Incremental Soil Sampling, will be modified to include the agreed upon sampling approach if future sampling is to be conducted.

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[ ] **Not Applicable** [ ] **Reject** [X] **Low Bias*** [ ] **Estimate** [X] **High Bias** [ ] **No Bias**

*NOTE: Potentially applies to previously collected samples. To be further evaluated based upon results of resampling noted above. In order to determine if re-sampling should occur in the decision units that have not yet been re-sampled, the analytical results for decision units that have not been re-sampled should be adjusted such that the result accounts for the variability between sampling methodologies and the limited re-sampling of the DUs and then compared relative to screening thresholds. In order to make this adjustment, the maximum RPD for the decision units that have been re-sampled should be determined on a chemical by chemical basis. This maximum RPD for each chemical should be increased by 10% to account for the limited re-sampling and unknown realm of uncertainty. The original result for the DUs should be increased by this percentage (maximum RPD% +10%). If this adjusted value exceeds the minimum of the applicable human health or ecological screening values for a depth interval, and would not have prior to the adjustment, re-sampling of the entire interval according to the current protocol is required.

Roux Project Manager Approval: Andrew Baris Date: 7/21/2016
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9/7/2016
(USEPA RPM or designate)

Preliminary - Under EPA and MDEQ Review

DATA QUALITY INDICATOR DEFINITIONS

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #5

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Amy Hoffmann, Field Manager Date: 7/21/2016

Applicable section of SAP/SOP:

SAP Section 4.7: Monitoring Well Installation

Description of Modification:

An additional Water Table Monitoring Well, CFMW-056b, will be installed adjacent to Deep Monitoring Well CFMW-056a and Existing Monitoring Well CFMW-056 (CFMW-056 is the new identifier for existing well TW-11). A figured is attached showing the location of CFMW-056, 056a and 056b relative to Site features.

Preliminary Under EPA and MDEQ Review

Rationale for Modifications / Potential Implications of Modifications:

During the drilling of the borehole for deep monitoring well CFMW-056a, an initial water bearing zone was encountered from 36 to 107 ft bgs, followed by lower permeability conditions from a depth of 107 to 121 ft bgs (fine sand and silt with some clay). Based on these observations, deep monitoring well CFMW-056a was installed beneath the low permeability layer and screened from 125 to 135 ft bgs, in accordance with the SAP.

Depth to bottom at existing monitoring well CFMW-056 was gauged on April 26, 2016 and was measured to be 162 ft bgs. According to records, the existing well was installed as an open bottom well with no screen.

Monitoring well CFMW-056b was added to the scope to evaluate conditions immediately beneath the water table. The added well was screened from 40-50 ft bgs.

Duration of Modification (Check one):

[X] Temporary
Date(s) 7/19/2016
Sample Numbers Drilling location CFMW-056a

[ ] Permanent (Proposed Text Modification Section)
Effective Date: _____

Proposed Text Modifications in Associated Document:

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[X] **Not Applicable** [ ] **Reject** [ ] **Low Bias** [ ] **Estimate** [ ] **High Bias** [ ] **No Bias**

Roux Project Manager Approval: Andrew Baris Date: 7/21/2016
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9/7/2016
(USEPA RPM or designate)

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #6

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Michael Ritorto, RI Manager Date: 8/23/2016

Applicable section of SAP/SOP:

SAP Section 4.6: Soil Borings and Soil Sampling

Description of Modification:

Seven (7) test pits to 12 feet below land surface will be completed in the borrow pit area (see attached figures). The test pits will be completed utilizing an excavator operated by Cascase personnel under the oversight of Roux Associates. Test pitting is being performed in lieu of soil borings because the drillers have indicated that the terrain is not traversable with the sonic drill rig. Soil samples will be collected by Roux Associates personnel from each test pit location from three intervals including 0 to 0.5 ft-bls, 2 to 4 ft-bls, and 10 to 12 ft-bls. The 0-0.5 sample will be collected prior to digging the test pit using a spade from the surface. Roux Associates personnel will enter the test pit area and collect the 2 to 4 ft-bls sample using a spade from a clean sidewall. The 10 to 12 ft-bls sample will be collected from the excavator bucket. Additional opportunity samples will be collected if visual staining or odors are observed within the test pits.

Soil samples will be analyzed for the following parameters:

- TCL VOCs (excluding surface soil samples)
- TCL SVOCs
- TAL Metals
- TCL PCBs
- TCL Pesticides (surface samples only)
- Total Cyanide: and
- Fluoride

Preliminary - Under EPA and MDEQ Review

Rationale for Modifications / Potential Implications of Modifications:

The additional soil samples are proposed to be collected in August 2016 as part of the ongoing Phase I Site Characterization program. Soil analytical data from the test pits will be added to the overall Phase I Site Characterization dataset and will be utilized to initially evaluate conditions within the borrow pit area.

Preliminary - Under EPA and MDEQ Review

Duration of Modification (Check one):

[X] Temporary

Date(s) 8/23/2016

Sample Numbers CFTP-17 through CFTP-23

[ ] Permanent (Proposed Text Modification Section)

Effective Date: _____

Proposed Text Modifications in Associated Document:

NA

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[X] **Not Applicable** [ ] **Reject** [ ] **Low Bias** [ ] **Estimate** [ ] **High Bias** [ ] **No Bias**

Roux Project Manager Approval: Michael Ritorto _____ Date: 8/23/2016

(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian _____ Date: 9/7/2016

(USEPA RPM or designate)

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #7

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Amy Hoffmann, Field Manager Date: 8/22/2016

Applicable section of SAP/SOP:

SAP Section 4.6.1 – Source Area Soil Investigation

Description of Modification:

Soil Borings CFSB-113 and CFSB-115 (see attached map) within the South Percolation Pond will be advanced using a hand auger rather than with a drill rig. If field personnel are not able to advance the sampling equipment to a depth of 12 feet to collect the 10 to 12 ft sample specified in the SAP, the soil sample will instead be collected from the deepest two-foot interval that can be achieved by the field personnel (estimated maximum depth of hand tools is 5-6 ft-bls).

Rationale for Modifications / Potential Implications of Modifications:

Due to the presence of surface water, portions of the South Percolation Pond are inaccessible with the sonic-rotary and/or direct-push drilling rigs. Proposed soil borings CFSB-113 and CFSB-115 are located within one of the inaccessible areas; therefore, these borings will be advanced using hand tools. Discrete soil samples will be collected in accordance with the SAP. However, as noted above, if the deeper soil sample interval (i.e., 10 to 12 feet) cannot be achieved via hand tools, the soil sample will be collected from the deepest two-foot interval that can be achieved. This change may limit the vertical delineation of soil quality at these two locations. However, it is noted that the six (6) other borings completed using drill rigs within the South Ponds achieved the 12 ft depth specified in the SAP. Thus, there will be other data to evaluate soil quality conditions at depths of 10 to 12 ft at multiple locations beneath the ponds. Additionally, data collected from these samples will be evaluated and discussed to determine if additional sampling will need to be addressed during phase II.

Preliminary - Under EPA and MDEQ Review

Duration of Modification (Check one):

[X] Temporary

Date(s) 8/22/2016

Sample Numbers CFSB-113 and CFSB-115

[ ] Permanent (Proposed Text Modification Section)

Effective Date: _____

Proposed Text Modifications in Associated Document:

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[ ] **Not Applicable** [ ] **Reject** [ ] **Low Bias** [ ] **Estimate** [ ] **High Bias** [X] **No Bias**

Roux Project Manager Approval: Michael Ritorto Date: 8/22/2016

(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9/7/2016

(USEPA RPM or designate)

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Preliminary - Under EPA and MDEQ Review

Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities
Columbia Fall Aluminum Company RI/FS
Phase 1 SAP MOD #8

Instructions to Requester: **Submit to Roux RI Manager or Roux RI/FS Project Manager**
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

Project Work Plan/QAPP (check one):

[X] 2015 Phase 1 SAP

[ ] SOP (Title, # and approval date): _____

Requester: Michael Ritorto, RI Manager Date: 8/30/2016

Applicable section of SAP/SOP:

SAP Section 4.9: Surface Water and Sediment Sampling

Preliminary - Under EPA and MDEQ Review

Description of Modification:

Selected surface water and sediment sample locations within the Flathead River will be sampled via boat. When sampling from the boat, a ponar dredge sampling device and/or other hand tools will be utilized to collect the sample in accordance with Roux SOP 5.2 that was provided in the Phase I SAP. The boat and captain will be provided by Kennedy/Jenks Consulting (Whitefish, Montana). Kennedy/Jenks Consulting is new subcontractor to the project and will be working as a subcontractor to Roux Associates.

During use of the boat, Roux Associates and Kennedy/Jenks personnel will implement safe boating practices including use of a personal flotation devices and spotting of sampling personnel while sampling. Additionally, all personnel involved with the sampling will review the Job Hazard Analysis for boating activities provided by Kennedy/Jenks (see attached). A tailgate meeting will also be held before the boating event and potential hazards and mitigative actions will be discussed.

Rationale for Modifications / Potential Implications of Modifications:

During the initial site reconnaissance, several surface water and sediment sample locations along the Flathead River were deemed inaccessible by foot due to the presence of forested areas and limited bank/shoreline for traversing. Use of a boat to access some of the sampling locations will provide easier and safer access to the sampling locations. The boat will also allow Roux Associates personnel the evaluate the sampling locations prior to sample collection and evaluate potential locations where sediment is present, if any.

Preliminary - Under EPA and MDEQ Review

Duration of Modification (Check one):

[X] Temporary
Date(s) 8/30/2016
Sample Numbers CFSW/CFSD 001 through 008 and 017

[ ] Permanent (Proposed Text Modification Section)
Effective Date: _____

Proposed Text Modifications in Associated Document:

Preliminary - Under EPA and MDEQ Review

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

[ ] **Not Applicable** [ ] **Reject** [ ] **Low Bias** [ ] **Estimate** [ ] **High Bias** [X] **No Bias**

Roux Project Manager Approval: Michael Ritorto Date: 8/30/2016
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: 9/7/2016
(USEPA RPM or designate)

DATA QUALITY INDICATOR DEFINITIONS

Reject – Samples associated with this modification form are not useable. The conditions outlined in the modification form adversely affect the associated sample to such a degree that the data are not reliable.

Low Bias – Samples associated with this modification form are useable, but results are likely to be biased low. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated low.

Estimate – Samples associated with this modification form are useable, but results should be considered approximations. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimates.

High Bias – Samples associated with this modification form are useable, but results are likely to be biased high. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated high.

No Bias – Samples associated with this modification form are useable as reported. The conditions outlined in the modification form suggest that associated sample data are reliable as reported.

Preliminary - Under EPA and MDEQ Review

APPENDIX J

FOIA Request Responses

Preliminary - Under EPA and MDEQ Review

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

FEB - 9 2016

Ref: 8P

Roux Associates, Inc.
Attn: Joseph P. Gavin
209 Shafter Street
Islandia, New York 11739

Re: FOIA Request EPA-R8-2016-003565

Dear Mr. Gavin:

Preliminary Under EPA and MDEQ Review

This letter is in response to your Freedom of Information Act (FOIA) request regarding Phase 1 Environmental Site Assessment Data for: *2000 Aluminum Drive, Columbia Falls, Montana 59912.*

The information you requested is publicly available at http://epa.gov/myproperty/ or http://www3.epa.gov/enviro/html/fii/myproperty/myproperty.html. The U.S. EPA no longer processes FOIA requests for information which is publicly available. If the property address is assigned an EPA Registry ID or no data is available, the state has the lead for any remedial actions. To obtain additional information, contact the state. If you are unable to access specific documentation contained within these resources, please submit a FOIA request for the specific documents. Since the cost for providing this information does not meet our billing threshold, there is no charge.

Under the FOIA, you have the right to appeal this determination to the National Freedom of Information Office, U.S. EPA, FOIA and Privacy Branch, 1200 Pennsylvania Avenue, N.W. (2822T), Washington, D.C. 20460 (U.S. Postal Service Only), email: foia_hq@epa.gov. Only items mailed through the United States Postal Service may be delivered to 1200 Pennsylvania Avenue, N.W. If you are submitting your appeal via hand delivery, courier service or overnight delivery, you must address your correspondence to 1301 Constitution Avenue, N.W., Room 6416J, Washington, D.C. 20004. Your appeal must be made in writing, and it must be submitted no later than 30 calendar days from the date of this letter. The agency will not consider appeals received after the 30 calendar-day limit. The appeal letter should include the FOIA number listed above. For quickest possible handling, the appeal letter and its envelope should be marked "Freedom of Information Act Appeal."

If you have any questions concerning the provided information, please contact Alan Engels at engels.alan@epa.gov or by calling (303) 312-6306.

Sincerely,

Darcy O'Connor
Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

From: Wittenberg, Joyce
To: Joseph P. Gavin
Subject: RE: Request for records for 2000 Aluminum Drive Columbia Falls
Date: Thursday, February 18, 2016 9:03:29 AM
Attachments: image003.png
image004.png
image005.png

Mr. Gavin:

Thanks for checking back. I just got the updated links yesterday:

- **www.deq.mt.gov/Public/services/onlineservices**
- **www.deq.mt.gov/Land/lust**
- **www.deq.mt.gov/Land/lust/workplans**
- **http://deq.mt.gov/Land/lust/lustsites**

Let me know if you need further assistance.

Best,
Joyce

From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
Sent: Thursday, February 18, 2016 6:51 AM
To: Wittenberg, Joyce
Subject: RE: Request for records for 2000 Aluminum Drive Columbia Falls

Ms. Wittenberg,
I still have not received a response regarding available records and/or links pertaining to my request for records (Records Request #16-10).

Any assistance is greatly appreciated.

Regards.

Joseph P. Gavin
Project Hydrogeologist
Roux Associates, Inc.
209 Shafter St
Islandia, NY 11749
Cell: 516-754-6671
Direct: 631-630-2393
Office: 631-232-2600
Fax: 631-232-9898
Website: http://www.rouxinc.com
We solve our clients' most challenging environmental problems.

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From: Wittenberg, Joyce [mailto:jwittenberg@mt.gov]
Sent: Tuesday, February 09, 2016 12:36 PM
To: Joseph P. Gavin
Subject: RE: Request for records for 2000 Aluminum Drive Columbia Falls

I apologize – I forgot that our website was recently updated. I'll get the updated links and get back to you.

From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
Sent: Tuesday, February 09, 2016 9:46 AM
To: Wittenberg, Joyce
Subject: RE: Request for records for 2000 Aluminum Drive Columbia Falls

Thank you for your response. However, the links provided in your email produce an error message, attached below.



Preliminary - Under EPA and MDEQ Review

Regards.
Joseph P. Gavin
Project Hydrogeologist
Roux Associates, Inc.
209 Shafter St
Islandia, NY 11749
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From: Wittenberg, Joyce [mailto:jwittenberg@mt.gov]
Sent: Tuesday, February 09, 2016 10:38 AM
To: Joseph P. Gavin
Subject: FW: Request for records for 2000 Aluminum Drive Columbia Falls

REFERENCE: Records Request #16-10

Hello Joseph.

Thank you for your interest in the Montana Department of Environmental Quality (DEQ) records. DEQ has a number of resources available on its website (www.deq.mt.gov) that you may find useful in preparing a Environmental Site Assessment. This data is available 7 days a week, 24 hours a day. The online sites are:

- http://deq.mt.gov/onlineservices.mcpx
- http://deq.mt.gov/LUST/LUSTSites.mcpx
- http://deq.mt.gov/onlineservices.mcpx (Various Summary reports are available on the Data Search Tool. Hover over the text to identify these hyperlinks that will open reports or take you to more resources.)

It may be faster and more cost-effective for you to search these sites for the data you need, before having me ask our staff to begin researching and compiling files for your request. If, after your online search, you need additional data or files, you may contact me directly at 406-444-6701 or jwittenberg@mt.gov.

The State of Montana allows a reasonable charge for copies and staff time spent to compile and make copies. DEQ's policy allows for the following charges:

- Actual hourly rate of staff fulfilling the request (gathering files & information, research, copying, scanning, legal review)
- $.10 per sheet of paper for copying
- Actual cost for CDs, postage, and other mailing materials
- Actual cost for any other incidentals directly related to the request

If the records are too large in volume, we may request that you either come review the files in person and make your own copies or hire another business to scan or copy the records here at our office. We can provide you with information about local vendors who provide this service.

Please let me know if you need further assistance.

Regards,

Joyce L. Wittenberg
Records & Information Manager
406-444-6701

Preliminary - Under EPA and MDEQ Review

From: Peterson, Lisa
Sent: Friday, February 05, 2016 12:24 PM
To: Wittenberg, Joyce
Subject: FW: Request for records for 2000 Aluminum Drive Columbia Falls

For you.

Lisa M. Peterson
Public Information Officer
MT Department of Environmental Quality/Permitting and Compliance Division
406-444-2929
406-461-2503 (cell)

From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
Sent: Friday, February 05, 2016 9:29 AM
To: Peterson, Lisa
Subject: Request for records for 2000 Aluminum Drive Columbia Falls

Ms. Petersen,
I left you a message at your office line. I need to submit a Freedom of Information Act request to the Montana Department of Environmental Quality for the property 2000 Aluminum Drive Columbia Falls.

I was unsure if the request can be submitted to you, another person within your office or to each individual division. Please see the request attached to this email and notify me if a different procedure is required.

Thank you.

Joseph P. Gavin
Project Hydrogeologist
Roux Associates, Inc.
209 Shafter St
Islandia, NY 11749
Cell: 516-754-6671
Direct: 631-630-2393
Office: 631-232-2600
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Michael Ritorto

From: Burke, Linda F NWO <Linda.F.Burke@usace.army.mil>
Sent: Monday, March 07, 2016 3:22 PM
To: Joseph P. Gavin
Subject: RE: Freedom of Information Act Request (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Mr. Gavin - I was given a copy of your FOIA request that you forwarded to the Seattle District a couple of weeks back I have checked with all the offices in the Omaha District and we do not have any records responsive to your request. Do you want a formal "no records" response?

Sincerely,

Linda F. Burke
Supervisory Paralegal Specialist
Phone: 402/995-2603
email: linda.f.burke@usace.army.mil

Preliminary Under EPA and MDEQ Review

-----Original Message-----
From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
Sent: Monday, March 07, 2016 2:12 PM
To: foia-nwo@usace.army.mil
Subject: [EXTERNAL] FW: Freedom of Information Act Request

Please see that attached Freedom of Information Act request, respectfully requesting copies of any and all public records pertaining to the property located at 2000 Aluminum Drive, Columbia Falls, Montana 59912.

The Site is a former aluminum smelter that was under guidance of the Montana Department of Environmental Quality while in operation. The Site has been proposed to be put on the Superfund NPL, but has not yet been listed. The Site borders the Flathead River and thus the USACE may have been involved at some point. We are interested because Roux has been hired to perform the RI/FS. We are submitting the FOIA request as part of our formal records review, as described in the RI/FS Work Plan (See website: www.rouxinc.com/cfac-and-usepa-finalize-ri-fs-work-plan)

This request initially was sent to the Seattle District, based on the Army Corps of Engineers website regarding FOIA submittals, so any expedition of this request will be appreciated.

Please inform me of any problems or concerns regarding this request.

Best Regards.

Joseph P. Gavin
Project Hydrogeologist
Roux Associates, Inc.
209 Shafter St
Islandia, NY 11749
Cell: 516-754-6671
Direct: 631-630-2393
Office: 631-232-2600
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Preliminary - Under EPA and MDEQ Review

-----Original Message-----
From: Seattle District FOIA [mailto:foia-nws@usace.army.mil]
Sent: Monday, March 07, 2016 10:51 AM
To: Joseph P. Gavin
Subject: RE: Freedom of Information Act Request

You can contact our Omaha District office at foia-nwo@usace.army.mil or Phone: 402-995-2603

Richard Hynes

-----Original Message-----
From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
Sent: Monday, March 07, 2016 5:04 AM
To: Seattle District FOIA <foia-nws@usace.army.mil>
Subject: [EXTERNAL] RE: Freedom of Information Act Request

Mr. Hynes,
It has been approximately three weeks since your last message (seen below) and I have not heard from the Omaha District office. I attached my initial response, submitted on February 5, 2016, to this email for reference.

I greatly appreciate your assistance with these matters.

Best regards.

Joseph P. Gavin
Project Hydrogeologist
Roux Associates, Inc.
209 Shafter St

Islandia, NY 11749
Cell: 516-754-6671
Direct: 631-630-2393
Office: 631-232-2600
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Preliminary - Under EPA and MDEQ Review

-----Original Message-----
From: Joseph P. Gavin
Sent: Thursday, February 11, 2016 9:45 AM
To: Seattle District FOIA
Subject: Re: Freedom of Information Act Request

Thank you for your assistance
Regards
Joe

Sent from my iPhone

> On Feb 11, 2016, at 9:39 AM, Seattle District FOIA <foia-nws@usace.army.mil> wrote:
>
> I have determined for sure that this would not be a Seattle District FOIA request, so I have forwarded your request to our Omaha District office. They will respond to you directly, but I don't think they have any documents.
>
> Let me know if you don't hear from Omaha within three weeks.
>
> Richard Hynes
>
> -----Original Message-----
> From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
> Sent: Wednesday, February 10, 2016 11:46 AM
> To: Seattle District FOIA <foia-nws@usace.army.mil>
> Subject: [EXTERNAL] RE: Freedom of Information Act Request
>
> The Site is a former aluminum smelter that was under guidance of the Montana Department of Environmental Quality while in operation. The Site has been proposed to be put on the Superfund NPL, but has not yet been listed. The Site borders the Flathead River and thus the USACE may have been involved at some point. We are interested because Roux has been hired to perform the RI/FS. We are submitting the FOIA request as part of our formal records review, as described in the RI/FS Work Plan. See website below.

>
> BlockedBlockedhttp://www.rouxinc.com/cfac-and-usepa-finalize-ri-fs-wor
> k-plan/
>
> Thank you.
> Regards.
>
> Joseph P. Gavin
> Project Hydrogeologist
> Roux Associates, Inc.
> 209 Shafter St
> Islandia, NY 11749
> Cell: 516-754-6671
> Direct: 631-630-2393
> Office: 631-232-2600
> Fax: 631-232-9898
> Website: BlockedBlockedhttp://www.rouxinc.com We solve our clients'
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>
>
> -----Original Message-----
> From: Seattle District FOIA [mailto:foia-nws@usace.army.mil]
> Sent: Monday, February 08, 2016 5:30 PM
> To: Joseph P. Gavin
> Subject: RE: Freedom of Information Act Request
>
> Is the property you are referencing a Formerly Used Defense Site? Is it a Superfund site? Why are you interested in this specific site? I am just asking these questions because I am trying to determine where to look for these documents.
>
> I have also forwarded your request to our Omaha District to see if they have any documents. I have not heard back from them.
>
> The web site you referenced sometimes refers requesters to the Seattle District for Montana documents because the Seattle District operates Libby Dam. I believe most of the rest of the state is covered by our Omaha District office, but I will find out for sure.
>
> Richard Hynes
>
> -----Original Message-----
> From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
> Sent: Monday, February 08, 2016 8:18 AM

Preliminary - Under EPA and MDEQ Review

> To: Seattle District FOIA <foia-nws@usace.army.mil>
> Subject: [EXTERNAL] RE: Freedom of Information Act Request
>
> Mr. Hynes,
> Thank you for your response. I referenced the Army Corp of Engineers website regarding districts/divisions for a particular address and I was directed to the Seattle district office. If this is an error, please let me know, so I may make the request to the appropriate office.
>
> I appreciate your assistance.
>
> Thank you.
>
> Joseph P. Gavin
> Project Hydrogeologist
> Roux Associates, Inc.
> 209 Shafter St
> Islandia, NY 11749
> Cell: 516-754-6671
> Direct: 631-630-2393
> Office: 631-232-2600
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>
> -----Original Message-----
> From: Seattle District FOIA [mailto:foia-nws@usace.army.mil]
> Sent: Monday, February 08, 2016 11:06 AM
> To: Joseph P. Gavin
> Subject: RE: Freedom of Information Act Request
>
> I'm not sure the Seattle District would have records for this area, but I will check.
>
> Richard Hynes
> FOIA Officer
> U.S. Army Corps of Engineers
> 206-764-3735
>
>
> -----Original Message-----
> From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
> Sent: Monday, February 08, 2016 7:53 AM

Preliminary - Under EIA and MDEQ Review

> To: Seattle District FOIA <foia-nws@usace.army.mil>
> Subject: [EXTERNAL] Freedom of Information Act Request
>
> Please see that attached Freedom of Information Act request, respectfully requesting copies of any and all public records pertaining to the property located at 2000 Aluminum Drive, Columbia Falls, Montana 59912.
>
>
>
> Please inform me of any problems or concerns regarding this request.
>
>
>
> Best Regards.
>
>
>
> Joseph P. Gavin
> Project Hydrogeologist
> Roux Associates, Inc.
> 209 Shafter St
> Islandia, NY 11749
>
> Cell: 516-754-6671
>
> Direct: 631-630-2393
> Office: 631-232-2600
> Fax: 631-232-9898
>
> Website: BlockedBlockedBlockedBlockedhttp://www.rouxinc.com
> <BlockedBlockedBlockedBlockedhttp://mail3.ny.rouxinc.com/exchweb/bin/r
> edir.as
> p?URL=Blockedhttps://protect.fireeye.com/url?k=6585ab6b-5cb3-4cbd-bb6e
> -cc401f
> 6b8418&u=Blockedhttps://protect.fireeye.com/url?k=d6d5c657-1c7f-40f1-b
> 6a6-dd7c335cb3b4&u=https://protect.fireeye.com/url?k=31af310e-cf85-4d09-8a73-
756950c19517&u=http://mail3.ny.rouxinc.com/exchweb/bin/redir.asp?U
> RL=http://
> Blockedwww.rouxinc.com>
>
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>

Preliminary Under EPA and MDEQ Review

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CLASSIFICATION: UNCLASSIFIED

Preliminary - Under EPA and MDEQ Review

Michael Ritorto

From: Seattle District FOIA <foia-nws@usace.army.mil>
Sent: Monday, March 07, 2016 10:51 AM
To: Joseph P. Gavin
Subject: RE: Freedom of Information Act Request

You can contact our Omaha District office at foia-nwo@usace.army.mil or Phone: 402-995-2603

Richard Hynes

-----Original Message-----
From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
Sent: Monday, March 07, 2016 5:04 AM
To: Seattle District FOIA <foia-nws@usace.army.mil>
Subject: [EXTERNAL] RE: Freedom of Information Act Request

Mr. Hynes,
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I greatly appreciate your assistance with these matters.

Best regards.

Joseph P. Gavin
Project Hydrogeologist
Roux Associates, Inc.
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-----Original Message-----

Preliminary - Under EPA and MDEQ Review

From: Joseph P. Gavin
Sent: Thursday, February 11, 2016 9:45 AM
To: Seattle District FOIA
Subject: Re: Freedom of Information Act Request

Thank you for your assistance
Regards
Joe

Sent from my iPhone

> On Feb 11, 2016, at 9:39 AM, Seattle District FOIA <foia-nws@usace.army.mil> wrote:
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> I have determined for sure that this would not be a Seattle District FOIA request, so I have forwarded your request to our Omaha District office. They will respond to you directly, but I don't think they have any documents.
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> Let me know if you don't hear from Omaha within three weeks.
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> Richard Hynes
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> -----Original Message-----
> From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
> Sent: Wednesday, February 10, 2016 11:46 AM
> To: Seattle District FOIA <foia-nws@usace.army.mil>
> Subject: [EXTERNAL] RE: Freedom of Information Act Request
>
> The Site is a former aluminum smelter that was under guidance of the Montana Department of Environmental Quality while in operation. The Site has been proposed to be put on the Superfund NPL, but has not yet been listed. The Site borders the Flathead River and thus the USACE may have been involved at some point. We are interested because Roux has been hired to perform the RI/FS. We are submitting the FOIA request as part of our formal records review, as described in the RI/FS Work Plan. See website below.
>
> BlockedBlockedhttp://www.rouxinc.com/cfac-and-usepa-finalize-ri-fs-wor
> k-plan/
>
> Thank you.
> Regards.
>
> Joseph P. Gavin
> Project Hydrogeologist
> Roux Associates, Inc.
> 209 Shafter St
> Islandia, NY 11749
> Cell: 516-754-6671
> Direct: 631-630-2393
> Office: 631-232-2600
> Fax: 631-232-9898
> Website: BlockedBlockedhttp://www.rouxinc.com We solve our clients'
> most challenging environmental problems.
>
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>
>
> -----Original Message-----
> From: Seattle District FOIA [mailto:foia-nws@usace.army.mil]
> Sent: Monday, February 08, 2016 5:30 PM
> To: Joseph P. Gavin
> Subject: RE: Freedom of Information Act Request
>
> Is the property you are referencing a Formerly Used Defense Site? Is it a Superfund site? Why are you interested in this specific site? I am just asking these questions because I am trying to determine where to look for these documents.
>
> I have also forwarded your request to our Omaha District to see if they have any documents. I have not heard back from them.
>
> The web site you referenced sometimes refers requesters to the Seattle District for Montana documents because the Seattle District operates Libby Dam. I believe most of the rest of the state is covered by our Omaha District office, but I will find out for sure.
>
> Richard Hynes
>
> -----Original Message-----
> From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
> Sent: Monday, February 08, 2016 8:18 AM
> To: Seattle District FOIA <foia-nws@usace.army.mil>
> Subject: [EXTERNAL] RE: Freedom of Information Act Request
>
> Mr. Hynes,
> Thank you for your response. I referenced the Army Corp of Engineers website regarding districts/divisions for a particular address and I was directed to the Seattle district office. If this is an error, please let me know, so I may make the request to the appropriate office.
>
> I appreciate your assistance.
>
> Thank you.
>
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> Project Hydrogeologist
> Roux Associates, Inc.
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> Islandia, NY 11749
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>
> -----Original Message-----
> From: Seattle District FOIA [mailto:foia-nws@usace.army.mil]
> Sent: Monday, February 08, 2016 11:06 AM
> To: Joseph P. Gavin
> Subject: RE: Freedom of Information Act Request
>
> I'm not sure the Seattle District would have records for this area, but I will check.
>
> Richard Hynes
> FOIA Officer
> U.S. Army Corps of Engineers
> 206-764-3735
>
>
> -----Original Message-----
> From: Joseph P. Gavin [mailto:jgavin@rouxinc.com]
> Sent: Monday, February 08, 2016 7:53 AM
> To: Seattle District FOIA <foia-nws@usace.army.mil>
> Subject: [EXTERNAL] Freedom of Information Act Request
>
> Please see that attached Freedom of Information Act request, respectfully requesting copies of any and all public records pertaining to the property located at 2000 Aluminum Drive, Columbia Falls, Montana 59912.
>
>
>
> Please inform me of any problems or concerns regarding this request.
>
>
>
> Best Regards.
>
>
>
> Joseph P. Gavin
> Project Hydrogeologist
> Roux Associates, Inc.
> 209 Shafter St
> Islandia, NY 11749

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> <BlockedBlockedBlockedBlockedhttp://mail3.ny.rouxinc.com/exchweb/bin/r
> edir.as
> p?URL=Blockedhttps://protect.fireeye.com/url?k=6585ab6b-5cb3-4cbd-bb6e
> -cc401f
> 6b8418&u=Blockedhttps://protect.fireeye.com/url?k=d6d5c657-1c7f-40f1-b
> 6a6-dd7c335cb3b4&u=http://mail3.ny.rouxinc.com/exchweb/bin/redir.asp?U
> RL=http://
> Blockedwww.rouxinc.com>
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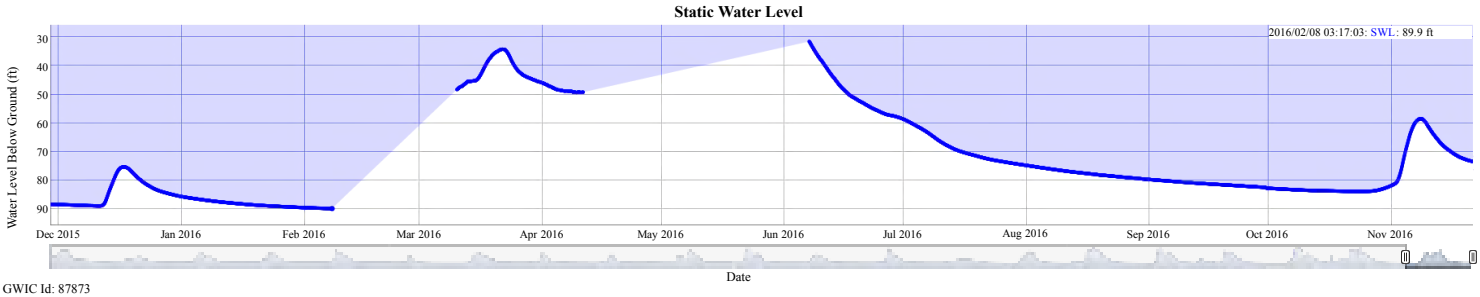
APPENDIX K

Hydrographs from Long Term Pressure Transducer Data

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Groundwater Information Center Well Hydrograph

The following chart represents the current hydrograph for this well. Data reported are static water levels in feet below ground surface. A filter has been applied to the data to remove all dry and/or non-static measurements.

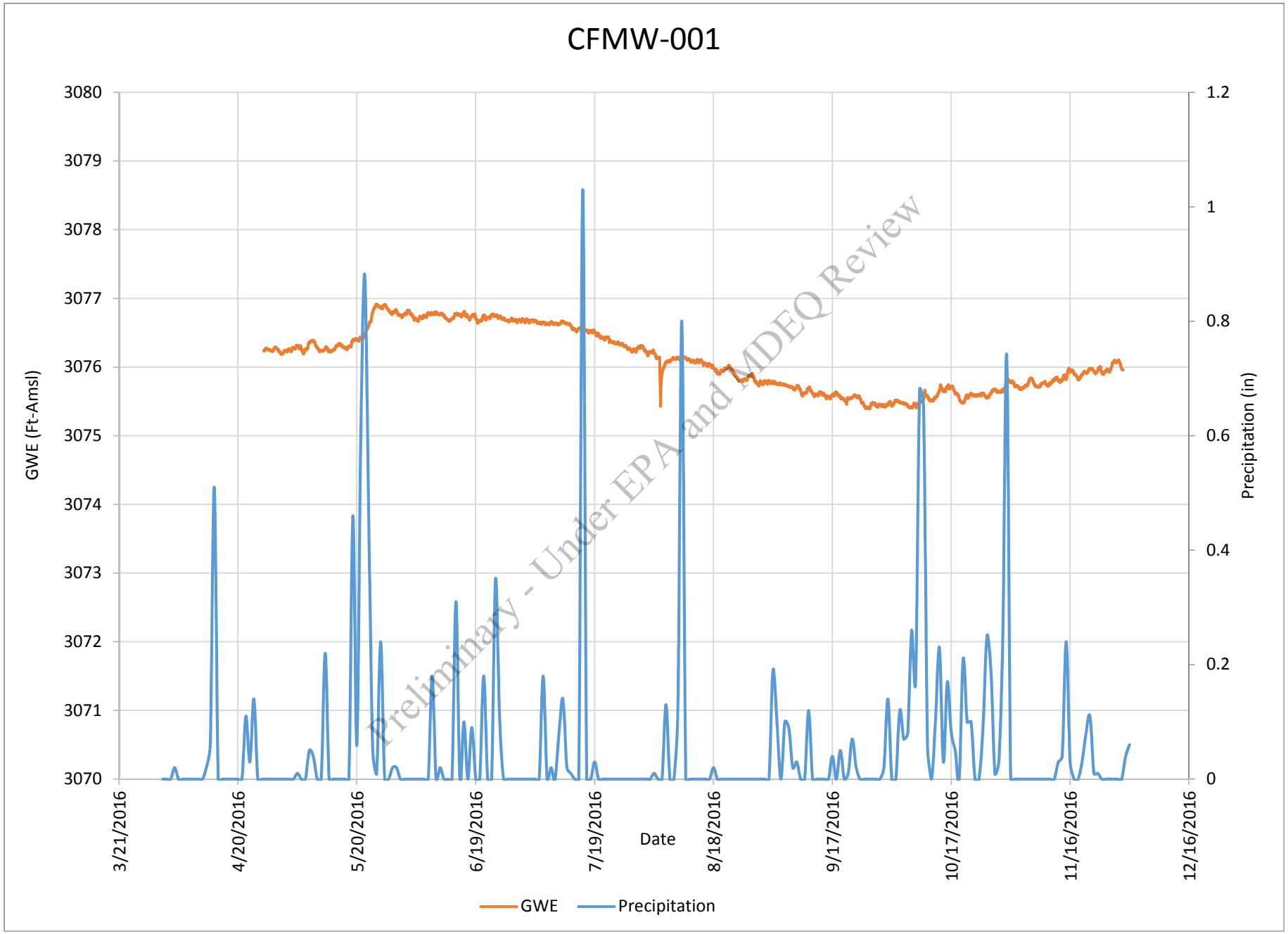


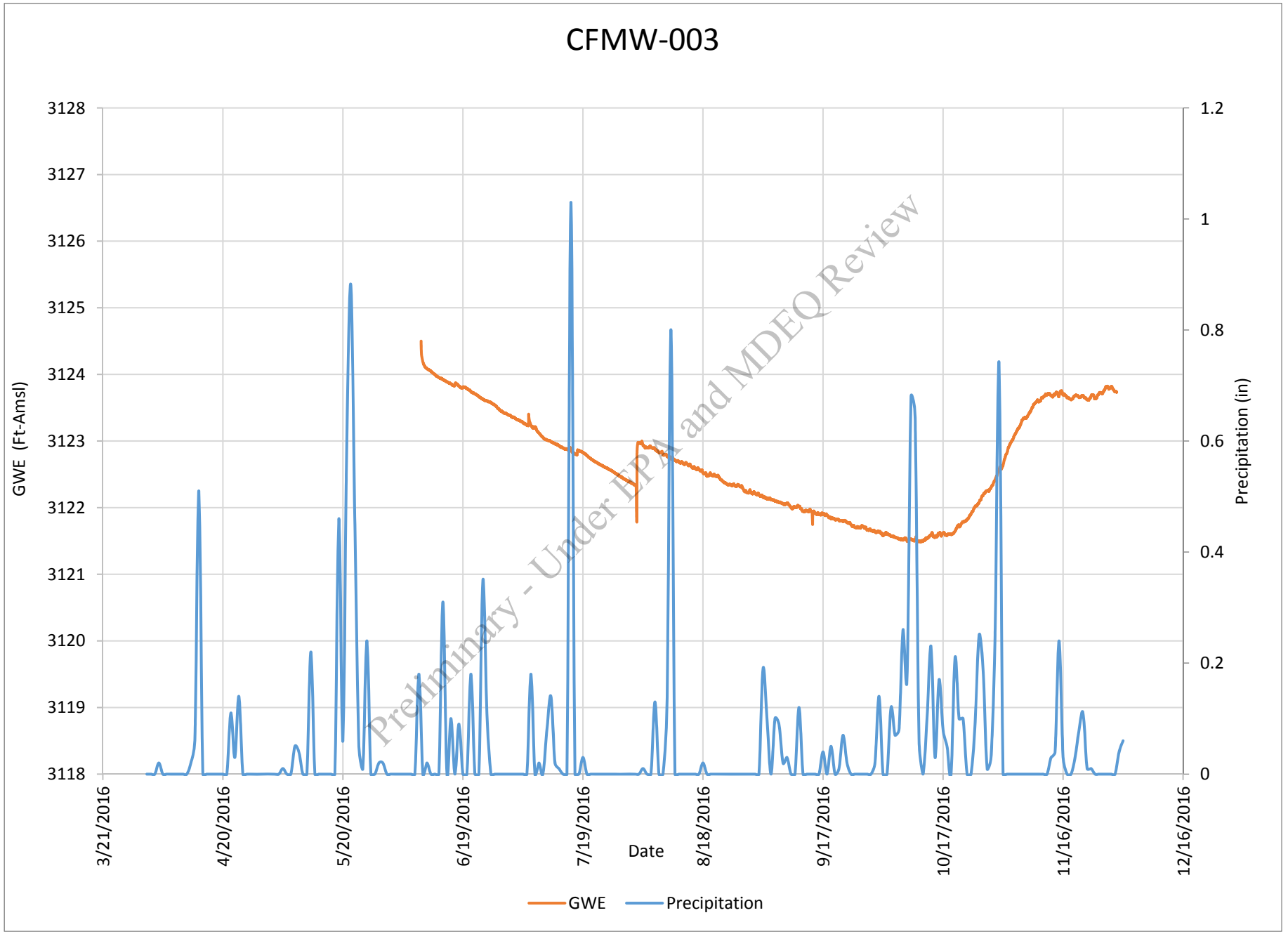
GWIC Id: 87873
Site Name: COLUMBIA FALLS ALUMINUM TEST WELL 03
Location: 31N20W34DDCC
Total Depth: 168 feet
Number of Measurements: 83573
Period of Record: 2/23/1996 - 11/21/2016 4:20:00 PM

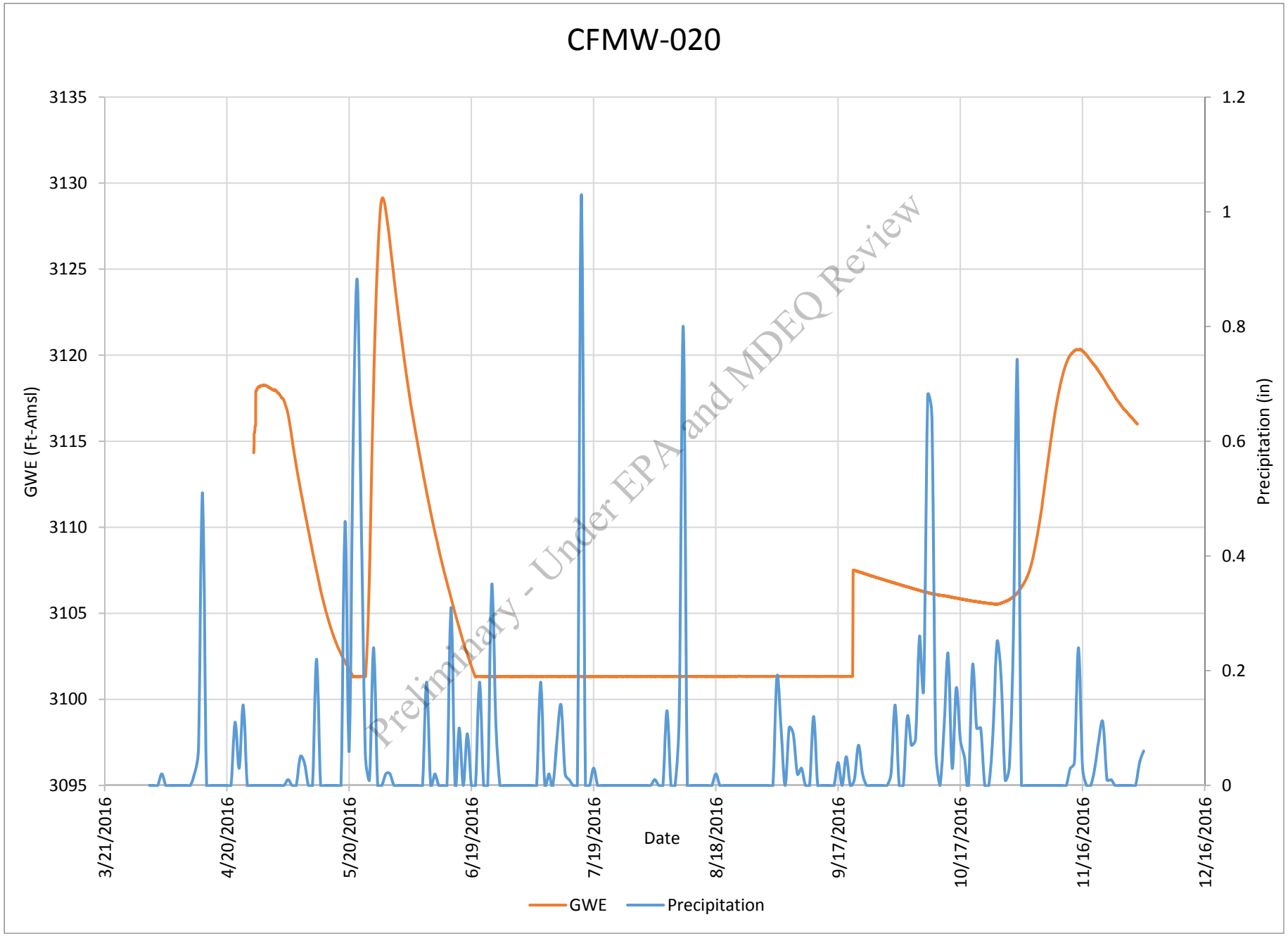
Disclaimer

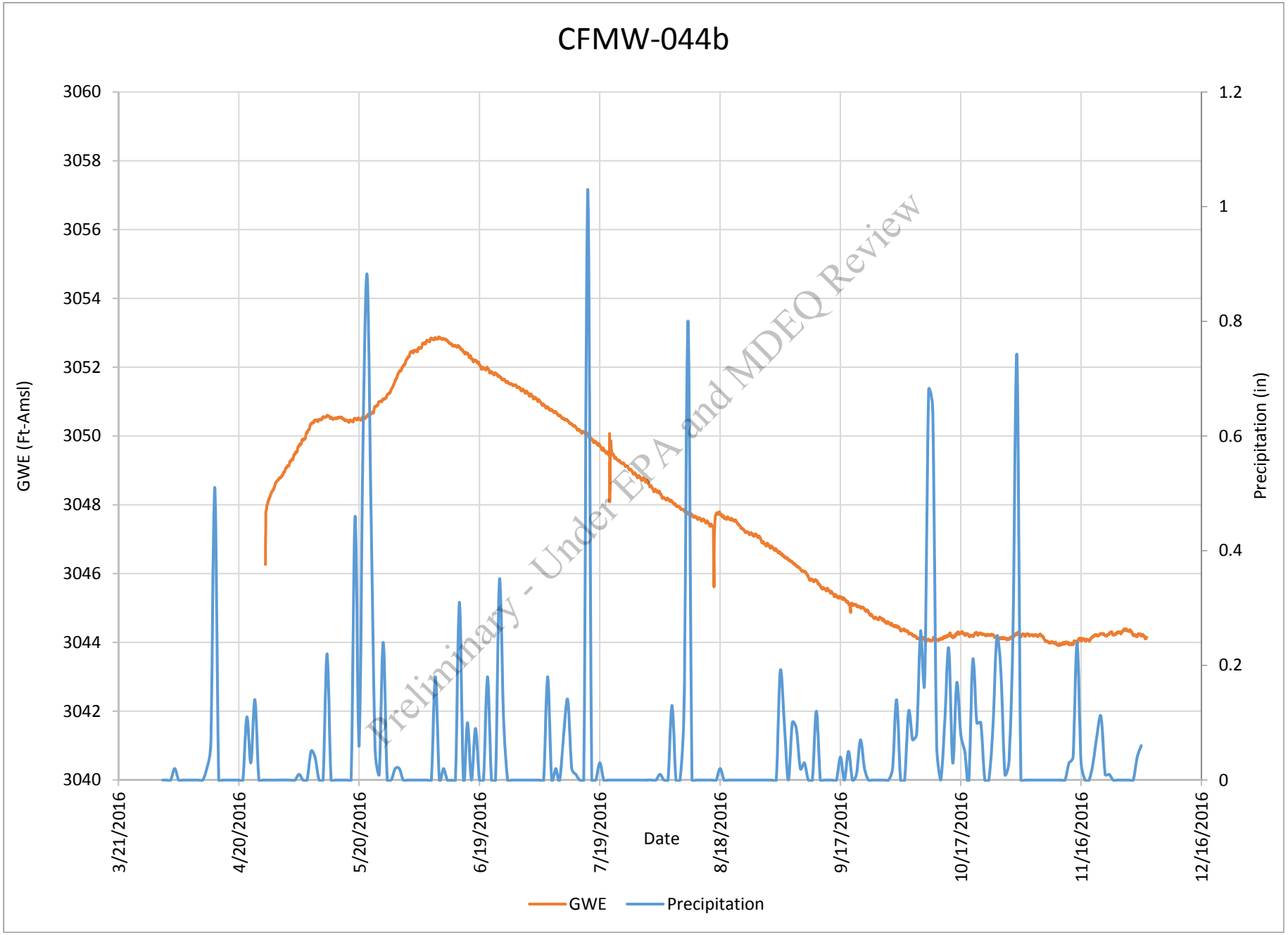
The preceding materials represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date [1/17/2017 7:06:56 AM] of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user at the time and date of the retrieval. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted. There may be wells in the request area that are not recorded at the Information Center. Water level data downloaded from GWIC are not filtered and will contain all measurements.

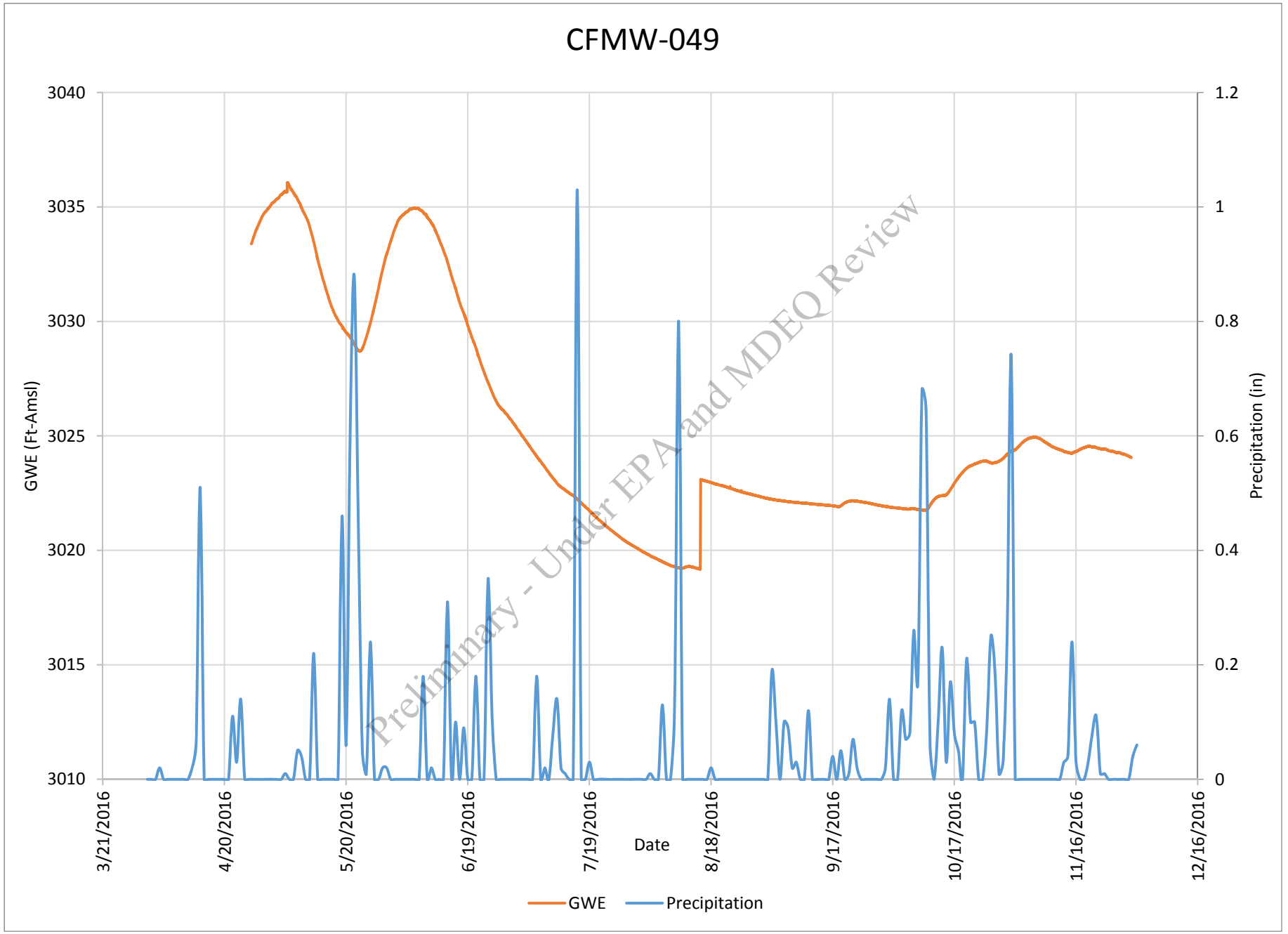
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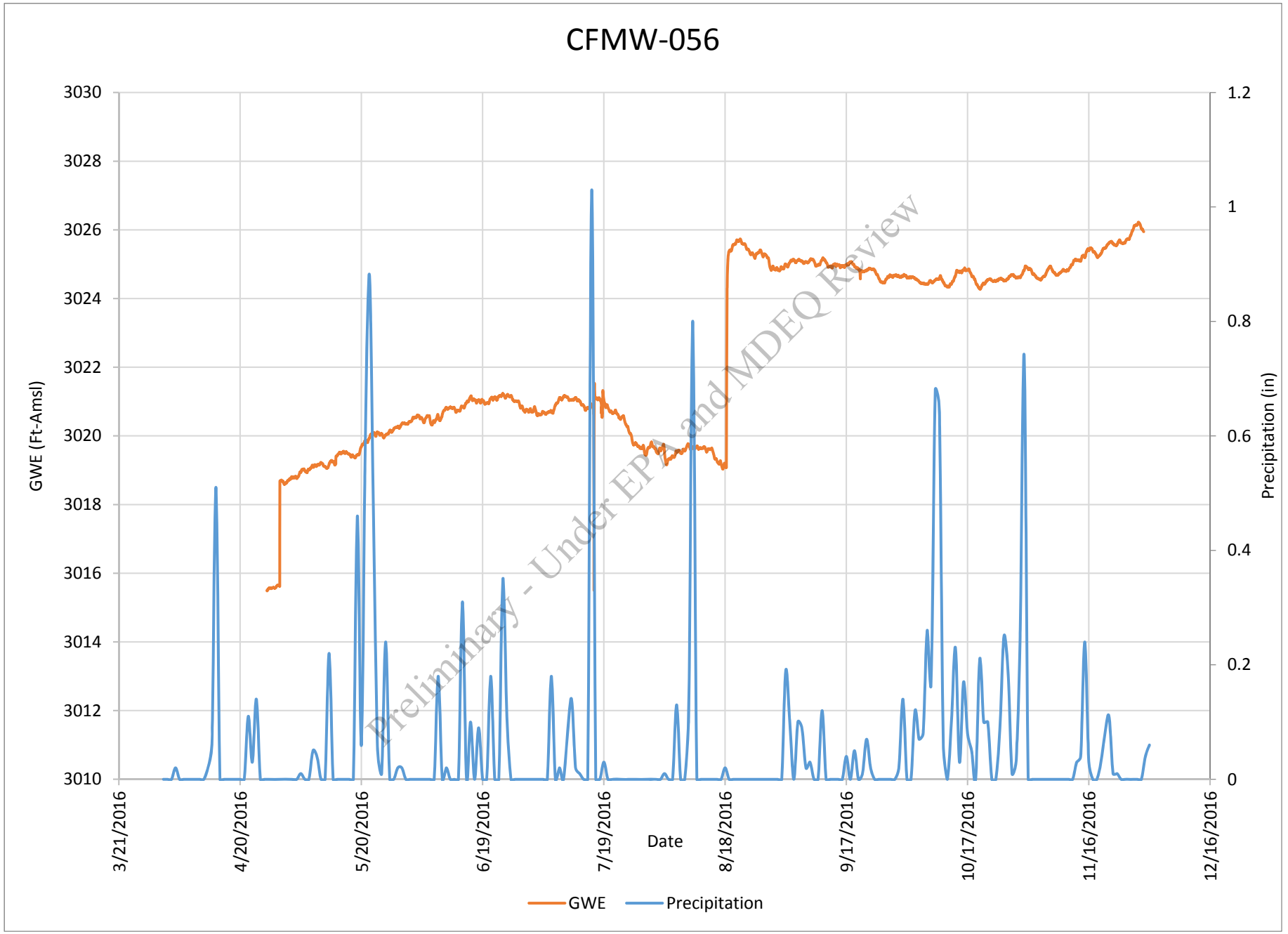

CFMW-001
GWE (Ft-Amsl)
Precipitation (in)
Date
3080
3079
3078
3077
3076
3075
3074
3073
3072
3071
3070
1.2
1
0.8
0.6
0.4
0.2
0
3/21/2016
4/20/2016
5/20/2016
6/19/2016
7/19/2016
8/18/2016
9/17/2016
10/17/2016
11/16/2016
12/16/2016
GWE
Precipitation
Preliminary - Under EPA and MDEQ Review


CFMW-003
GWE (Ft-Amsl)
Precipitation (in)
Date
3128
3127
3126
3125
3124
3123
3122
3121
3120
3119
3118
1.2
1
0.8
0.6
0.4
0.2
0
3/21/2016
4/20/2016
5/20/2016
6/19/2016
7/19/2016
8/18/2016
9/17/2016
10/17/2016
11/16/2016
12/16/2016
GWE
Precipitation
Preliminary - Under EPA and MDEQ Review


CFMW-020
GWE (Ft-Amsl)
Precipitation (in)
Date
3135
3130
3125
3120
3115
3110
3105
3100
3095
1.2
1
0.8
0.6
0.4
0.2
0
3/21/2016
4/20/2016
5/20/2016
6/19/2016
7/19/2016
8/18/2016
9/17/2016
10/17/2016
11/16/2016
12/16/2016
GWE
Precipitation
Preliminary - Under EPA and MDEQ Review


CFMW-044b
GWE (Ft-Amsl)
Precipitation (in)
Date
3060
3058
3056
3054
3052
3050
3048
3046
3044
3042
3040
1.2
1
0.8
0.6
0.4
0.2
0
3/21/2016
4/20/2016
5/20/2016
6/19/2016
7/19/2016
8/18/2016
9/17/2016
10/17/2016
11/16/2016
12/16/2016
GWE
Precipitation
Preliminary - Under EPA and MDEQ Review


CFMW-049
GWE (Ft-Amsl)
Precipitation (in)
3040
3035
3030
3025
3020
3015
3010
1.2
1
0.8
0.6
0.4
0.2
0
3/21/2016
4/20/2016
5/20/2016
6/19/2016
7/19/2016
8/18/2016
9/17/2016
10/17/2016
11/16/2016
12/16/2016
Date
GWE
Precipitation
Preliminary - Under EPA and MDEQ Review


CFMW-056
GWE (Ft-Amsl)
Precipitation (in)
Date
3030
3028
3026
3024
3022
3020
3018
3016
3014
3012
3010
1.2
1
0.8
0.6
0.4
0.2
0
3/21/2016
4/20/2016
5/20/2016
6/19/2016
7/19/2016
8/18/2016
9/17/2016
10/17/2016
11/16/2016
12/16/2016
GWE
Precipitation
Preliminary - Under EPA and MDEQ Review

APPENDIX L

Soil Laboratory Analytical Data Tables

1. VOCs in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
2. SVOCs in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
4. PCBs in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
5. Pesticides in Soil Samples Site-wide from Soil Boring and Monitoring Well Locations
6. General Chemistry in Site-wide Soil Samples from Soil Boring and Monitoring Well Locations
7. Dioxins and Furans in Soil Samples from Soil Boring and Monitoring Well Locations
8. SVOCs in Incremental Soil Samples
9. Metals in Incremental Soil Samples
10. PCBs in Incremental Soil Samples
11. Pesticides in Incremental Soil Samples
12. General Chemistry in Incremental Soil Samples
13. VOCs in Soil Samples from Drainage Structure Sampling Locations
14. SVOCs in Soil Samples from Drainage Structure Sampling Locations
15. Metals in Soil Samples from Drainage Structure Sampling Locations
16. PCBs in Soil Samples from Drainage Structure Sampling Locations

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17. Pesticides in Soil Samples from Drainage Structure Sampling Locations
18. General Chemistry in Soil Samples from Drainage Structure Sampling Locations
19. VOCs in Soil Samples from Background Area Samplings Locations
20. SVOCs in Soil Samples from Background Area Samplings Locations
21. Metals in Soil Samples from Background Area Samplings Locations
22. PCBs in Soil Samples from Background Area Samplings Locations
23. Pesticides in Soil Samples from Background Area Samplings Locations
24. General Chemistry in Soil Samples from Background Area Samplings Locations
25. VOCs in Soil Samples from Borrow Pit Sampling Locations
26. SVOCs in Soil Samples from Borrow Pit Sampling Locations
27. Metals in Soil Samples from Borrow Pit Sampling Locations
28. PCBs in Soil Samples from Borrow Pit Sampling Locations
29. Pesticides in Soil Samples from Borrow Pit Sampling Locations
30. General Chemistry Soil Samples from Borrow Pit Sampling Locations

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Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-002	CFMW-002	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-010	CFMW-010	CFMW-011a
				Sample Date:	6/13/2016	6/13/2016	5/31/2016	5/31/2016	5/31/2016	6/13/2016	6/13/2016	6/13/2016	5/18/2016	5/18/2016	6/25/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	10 - 12	0.5 - 2	10 - 12	10 - 12	0.5 - 2	10 - 12	0.5 - 2
				Sample Designation:	CFMW-002-SO-0.5-2	CFMW-002-SO-10-12	CFMW-003a-SO-0.5-2	CFMW-003a-SO-10-12	CFMW-DUP9-SO	CFMW-008a-SO-0.5-2	CFMW-008a-SO-10-12	CFMW-DUP14-SO	CFMW-010-SO-0.5-2.0	CFMW-010-SO-10-12	CFMW-Dup18-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00029 U	0.00036 U	0.00029 U	0.00035 U	0.00034 U	0.00037 U	0.00043 U	0.00033 U	0.00036 U	0.00016 U	0.00032 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00017 U	0.00019 U	0.00015 U	0.00016 U	0.000074 U	0.00014 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00034 U	0.00042 U	0.00034 U	0.0004 U	0.00039 U	0.00043 U	0.0005 U	0.00039 U	0.00042 U	0.00019 U	0.00037 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00021 U	0.00027 U	0.00022 U	0.00026 U	0.00025 U	0.00028 U	0.00032 U	0.00025 U	0.00027 U	0.00012 U	0.00024 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00026 U	0.00032 U	0.00026 U	0.00031 U	0.0003 U	0.00034 U	0.00038 U	0.0003 U	0.00032 U	0.00015 U	0.00029 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00031 U	0.00039 U	0.00032 U	0.00038 U	0.00037 U	0.0004 U	0.00046 U	0.00036 U	0.00039 U	0.00018 U	0.00035 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000084 U	0.00011 U	0.000085 U	0.0001 U	0.000099 U	0.00011 U	0.00012 U	0.000097 U	0.0001 U	0.000048 U	0.000093 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00024 U	0.00031 U	0.00025 U	0.00029 U	0.00029 U	0.00032 U	0.00036 U	0.00028 U	0.0003 U	0.00014 U	0.00027 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00036 U	0.00045 U	0.00036 U	0.00043 U	0.00042 U	0.00046 U	0.00053 U	0.00041 U	0.00045 U	0.0002 U	0.0004 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00011 U	0.00013 U	0.00011 U	0.00013 U	0.00013 U	0.00014 U	0.00016 U	0.00012 U	0.00013 U	0.000061 U	0.00012 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000084 U	0.00011 U	0.000085 U	0.0001 U	0.000099 U	0.00011 U	0.00012 U	0.000097 U	0.0001 U	0.000048 U	0.000093 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00017 U	0.00019 U	0.00015 U	0.00016 U	0.000074 U	0.00014 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.000091 U	0.00011 U	0.000093 U	0.00011 U	0.00011 U	0.00012 U	0.00014 U	0.00011 U	0.00011 U	0.000052 U	0.0001 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.000099 U	0.00012 U	0.0001 U	0.00012 U	0.00012 U	0.00013 U	0.00015 U	0.00011 U	0.00012 U	0.000056 U	0.00011 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0013 J	0.00074 U	0.00059 U	0.00071 U	0.00069 U	0.012	0.0023 J	0.0017 J	0.00073 U	0.00033 U	0.0021 J
2-Hexanone	20	130	0.00088	mg/kg	0.00072 U	0.0009 U	0.00073 U	0.00086 U	0.00084 U	0.00093 U	0.0011 U	0.00083 U	0.00089 U	0.00041 U	0.00079 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0017 U	0.0021 U	0.0017 U	0.002 U	0.002 U	0.0022 U	0.0025 U	0.002 U	0.0021 U	0.00096 U	0.0019 U
Acetone	6100	67000	0.29	mg/kg	0.019 J+	0.019 J+	0.0091	0.006	0.0078	0.13 J+	0.035 J+	0.024 J+	0.027	0.00046 U	0.045
Benzene	1.2	5.1	0.00023	mg/kg	0.00021 J	0.00019 U	0.00015 U	0.00018 U	0.00018 U	0.0097	0.00023 U	0.00018 U	0.00019 U	0.000087 U	0.0003 J
Bromoform	19	86	0.00087	mg/kg	0.000099 UJ	0.00012 U	0.0001 U	0.00012 U	0.00012 U	0.00013 U	0.00015 U	0.00011 U	0.00012 U	0.000056 U	0.00011 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00024 U	0.00031 U	0.00025 U	0.00029 U	0.00029 U	0.00032 U	0.00036 U	0.00028 U	0.0003 U	0.00014 U	0.00027 U
Carbon disulfide	77	350	0.024	mg/kg	0.00033 U	0.00046 J	0.00035 J	0.00039 U	0.0006 J	0.0019	0.00048 U	0.00038 U	0.00063 J	0.00019 U	0.00036 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00033 U	0.00041 U	0.00033 U	0.00039 U	0.00039 U	0.00042 U	0.00048 U	0.00038 U	0.00041 U	0.00019 U	0.00036 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00011 U	0.00013 U	0.00011 U	0.00013 U	0.00013 U	0.00014 U	0.00016 U	0.00012 U	0.00013 U	0.000061 U	0.00012 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00017 U	0.00019 U	0.00015 U	0.00016 U	0.000074 U	0.00014 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U	0.00017 U	0.00013 U	0.00014 U	0.000065 U	0.00013 U
Chloroethane	1400	5700	0.59	mg/kg	0.00027 U	0.00033 U	0.00027 U	0.00032 U	0.00031 U	0.00035 U	0.00039 U	0.00031 U	0.00033 U	0.00015 U	0.0003 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00016 U	0.0002 U	0.00016 U	0.00019 U	0.00019 U	0.00021 U	0.00024 U	0.00018 U	0.0002 U	0.000091 U	0.00018 U
Chloromethane	11	46	0.0049	mg/kg	0.00029 U	0.00036 U	0.00029 U	0.00035 U	0.00034 U	0.00037 U	0.00043 U	0.00033 U	0.00036 U	0.00016 U	0.00032 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00017 U	0.00021 U	0.00017 U	0.0002 U	0.0002 U	0.00022 U	0.00025 U	0.00019 U	0.00021 U	0.000095 U	0.00019 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U	0.00017 U	0.00013 U	0.00014 U	0.000065 U	0.00013 U
Cyclohexane	650	2700	1.3	mg/kg	0.00035 U	0.00044 U	0.00035 U	0.00042 U	0.00041 U	0.00052 J+	0.00052 U	0.0004 U	0.00044 U	0.0002 U	0.00039 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00029 U	0.00036 U	0.00029 U	0.00035 U	0.00034 U	0.00037 U	0.00043 U	0.00033 U	0.00036 U	0.00016 U	0.00032 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00024 U	0.00031 U	0.00025 U	0.00029 U	0.00029 U	0.00032 U	0.00036 U	0.00028 U	0.0003 U	0.00014 U	0.00027 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00016 U	0.0024	0.0002 U	0.00016 U	0.00017 U	0.000078 U	0.00015 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.000091 U	0.00011 U	0.000093 U	0.00011 U	0.00011 U	0.00012 U	0.00014 U	0.00011 U	0.00011 U	0.000052 U	0.0001 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00034 J	0.00019 U	0.00015 U	0.00016 U	0.000074 U	0.00014 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00069 U	0.00086 U	0.00069 U	0.00083 U	0.00081 U	0.017 J+	0.001 U	0.00079 U	0.00085 U	0.00039 U	0.00076 UJ
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00017 U	0.00019 U	0.00015 U	0.00016 U	0.000074 U	0.00014 U
Methylcyclohexane	--	--	--	mg/kg	0.00038 U	0.00048 U	0.00039 U	0.00046 U	0.00045 U	0.00062 J+	0.00056 U	0.00044 U	0.00047 U	0.00022 U	0.00042 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00024 U	0.00061 J	0.00025 U	0.00029 U	0.00029 U	0.00032 U	0.00036 U	0.00028 U	0.0003 U	0.00014 U	0.00027 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.000084 U	0.00011 U	0.000085 U	0.0001 U	0.000099 U	0.0038	0.00012 U	0.000097 U	0.0001 U	0.000048 U	0.000093 U
o-Xylene	65	280	0.019	mg/kg	0.00012 U	0.00015 U	0.00012 U	0.00015 U	0.00014 U	0.0016	0.00018 U	0.00014 U	0.00015 U	0.000069 U	0.00014 U
Styrene	600	3500	0.13	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U	0.00017 U	0.00013 U	0.00014 U	0.000065 U	0.00013 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00021 U	0.00027 U	0.00022 U	0.00026 U	0.00025 U	0.00034 J	0.00032 U	0.00025 U	0.00027 U	0.00012 U	0.00024 U
Toluene	490	4700	0.076	mg/kg	0.00015 J	0.00018 U	0.00015 U	0.00017 U	0.00017 U	0.012	0.00022 J	0.00019 J	0.00018 U	0.000082 U	0.00024 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.0003 U	0.00037 U	0.0003 U	0.00036 U	0.00035 U	0.00038 U	0.00044 U	0.00034 U	0.00037 U	0.00017 U	0.00033 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000076 U	0.000095 U	0.000077 U	0.000092 U	0.00009 U	0.000099 U	0.00011 U	0.000088 U	0.000095 U	0.000043 U	0.000084 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.0002 U	0.00025 U	0.0002 U	0.00024 U	0.00023 U	0.00026 U	0.00029 U	0.00023 U	0.00025 U	0.00011 U	0.00022 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00026 U	0.00032 U	0.00026 U	0.00031 U	0.0003 U	0.00034 U	0.00038 U	0.0003 U	0.00032 U	0.00015 U	0.00029 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.0003 U	0.00037 U	0.0003 U	0.00036 U	0.00035 U	0.00038 U	0.00044 U	0.00034 U	0.00037 U	0.00017 U	0.00033 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-011a	CFMW-011a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-016a	CFMW-016a	CFMW-018	CFMW-018	CFMW-018	CFMW-019a
				Sample Date:	6/25/2016	6/25/2016	5/20/2016	5/20/2016	5/20/2016	6/21/2016	6/21/2016	5/19/2016	5/19/2016	5/19/2016	5/25/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	10 - 12	10 - 12	0.5 - 2
				Sample Designation:	CFMW-011a-SO-0.5-2	CFMW-011a-SO-10-12	CFMW-012A-SO-0.5-2	CFMW-012A-SO-10-12	CFMW-DUP3-SO	CFMW-016a-SO-0.5-2	CFMW-016a-SO-10-12	CFMW-018-SO-0.5-2.0	CFMW-018-SO-10-12	CFMW-DUP2-SO	CFMW-019a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00033 U	0.00034 U	0.00055 U	0.00054 UJ	0.0004 U	0.00034 U	0.00031 U	0.00042 U	0.00034 U	0.00037 U	0.00036 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00015 U	0.00025 U	0.00024 U	0.00018 U	0.00015 U	0.00014 U	0.00019 U	0.00015 U	0.00016 U	0.00016 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00038 U	0.0004 U	0.00064 U	0.00063 U	0.00046 U	0.00039 U	0.00035 U	0.00048 U	0.00039 U	0.00043 U	0.00042 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00024 U	0.00025 U	0.00041 U	0.0004 U	0.00029 U	0.00025 U	0.00023 U	0.00031 U	0.00025 U	0.00027 U	0.00027 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.0003 U	0.00031 U	0.0005 U	0.00049 UJ	0.00035 U	0.0003 U	0.00027 U	0.00037 U	0.0003 U	0.00033 U	0.00033 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00036 U	0.00037 U	0.0006 U	0.00059 U	0.00043 U	0.00037 U	0.00033 U	0.00045 U	0.00036 U	0.0004 U	0.00039 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000096 U	0.000099 UJ	0.00016 U	0.00016 UJ	0.00011 U	0.000099 U	0.000089 U	0.00012 U	0.000097 U	0.00011 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00028 U	0.00029 UJ	0.00047 U	0.00046 UJ	0.00033 U	0.00029 U	0.00026 U	0.00035 U	0.00028 U	0.00031 U	0.00031 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00041 U	0.00042 U	0.00069 U	0.00067 U	0.00049 U	0.00042 U	0.00038 U	0.00052 U	0.00041 U	0.00045 U	0.00045 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00012 U	0.00013 UJ	0.0002 U	0.0002 UJ	0.00015 U	0.00013 U	0.00011 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000096 U	0.000099 U	0.00016 U	0.00016 U	0.00011 U	0.000099 U	0.000089 U	0.00012 U	0.000097 U	0.00011 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00015 U	0.00025 U	0.00024 U	0.00018 U	0.00015 U	0.00014 U	0.00019 U	0.00015 U	0.00016 U	0.00016 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.0001 U	0.00011 UJ	0.00018 U	0.00017 UJ	0.00012 U	0.00011 U	0.000097 U	0.00013 U	0.00011 U	0.00012 U	0.00011 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00011 U	0.00012 UJ	0.00019 U	0.00019 UJ	0.00014 U	0.00012 U	0.0001 U	0.00014 U	0.00011 U	0.00013 U	0.00012 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0018 J	0.00069 U	0.0011 U	0.0011 U	0.0008 U	0.0017 J	0.0047	0.00085 U	0.00068 U	0.00075 U	0.00074 U
2-Hexanone	20	130	0.00088	mg/kg	0.00082 U	0.00084 U	0.0014 U	0.0013 UJ	0.00098 U	0.00084 U	0.00076 U	0.001 U	0.00083 U	0.00091 U	0.0009 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0019 U	0.002 U	0.0032 U	0.0032 UJ	0.0023 U	0.002 U	0.0018 U	0.0024 U	0.002 U	0.0021 U	0.0021 U
Acetone	6100	67000	0.29	mg/kg	0.038	0.0047 J-	0.031 J	0.0015 U	0.011 J	0.024 J+	0.063 J+	0.0088	0.0026 J	0.0059 J	0.001 UJ
Benzene	1.2	5.1	0.00023	mg/kg	0.00017 UJ	0.00018 U	0.00029 U	0.00029 UJ	0.00021 U	0.00034 J	0.00095	0.00022 U	0.00025 J	0.00019 U	0.00023 J
Bromoform	19	86	0.00087	mg/kg	0.00011 U	0.00012 U	0.00019 U	0.00019 U	0.00014 U	0.00012 U	0.0001 U	0.00014 U	0.00011 U	0.00013 U	0.00012 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00028 U	0.00029 U	0.00047 UJ	0.00046 UJ	0.00033 U	0.00029 U	0.00026 U	0.00035 U	0.00028 U	0.00031 U	0.00031 U
Carbon disulfide	77	350	0.024	mg/kg	0.00038 U	0.00039 U	0.0041 J	0.00062 U	0.0019 J	0.0005 J	0.00057 J	0.00047 U	0.00038 U	0.00042 U	0.00041 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00038 U	0.00039 U	0.00063 U	0.00062 U	0.00045 U	0.00039 U	0.00035 U	0.00047 U	0.00038 U	0.00042 U	0.00041 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00012 U	0.00013 U	0.0002 U	0.0002 UJ	0.00015 U	0.00013 U	0.00011 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00015 U	0.00025 U	0.00024 U	0.00018 U	0.00015 U	0.00014 U	0.00019 U	0.00015 U	0.00016 U	0.00016 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00013 U	0.00022 U	0.00021 U	0.00016 U	0.00013 U	0.00012 U	0.00017 U	0.00013 U	0.00015 U	0.00014 U
Chloroethane	1400	5700	0.59	mg/kg	0.00031 U	0.00031 U	0.00051 U	0.0005 U	0.00036 U	0.00031 U	0.00028 U	0.00039 U	0.00031 U	0.00034 U	0.00033 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00018 U	0.00019 U	0.00031 U	0.0003 UJ	0.00022 U	0.00019 U	0.00017 U	0.00023 U	0.00019 U	0.0002 U	0.0002 U
Chloromethane	11	46	0.0049	mg/kg	0.00033 U	0.00034 U	0.00055 UJ	0.00054 U	0.0004 U	0.00034 U	0.00031 U	0.00042 U	0.00034 U	0.00037 U	0.00036 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00019 U	0.0002 U	0.00032 U	0.00031 UJ	0.00023 U	0.0002 U	0.00018 U	0.00024 U	0.00019 U	0.00021 U	0.00021 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00013 U	0.00022 U	0.00021 UJ	0.00016 U	0.00013 U	0.00012 U	0.00017 U	0.00013 U	0.00015 U	0.00014 U
Cyclohexane	650	2700	1.3	mg/kg	0.0004 U	0.00041 U	0.00067 U	0.00066 UJ	0.00048 U	0.00041 U	0.00037 U	0.00051 U	0.00041 U	0.00045 J	0.00044 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00033 U	0.00034 U	0.00055 U	0.00054 U	0.0004 U	0.00034 U	0.00031 U	0.00042 U	0.00034 U	0.00037 U	0.00036 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00028 U	0.00029 U	0.00047 U	0.00046 U	0.00033 U	0.00029 U	0.00026 U	0.00035 U	0.00028 U	0.00031 U	0.00031 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00016 U	0.00016 U	0.00026 U	0.00026 UJ	0.00019 U	0.00016 U	0.00042 J	0.0002 U	0.00016 U	0.00017 U	0.00017 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.0001 U	0.00011 U	0.00018 U	0.00017 U	0.00012 U	0.00011 U	0.000097 U	0.00013 U	0.00011 U	0.00012 U	0.00011 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00015 U	0.00025 U	0.00024 UJ	0.00018 U	0.00015 U	0.00014 U	0.00019 U	0.00015 U	0.00016 U	0.00016 U
Methyl acetate	7800	120000	0.41	mg/kg	0.0019 J	0.00081 U	0.0013 U	0.0013 U	0.00094 U	0.00081 U	0.00073 U	0.00099 U	0.00079 U	0.00087 U	0.00086 UJ
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00015 U	0.00025 U	0.00024 UJ	0.00018 U	0.00015 U	0.00014 U	0.00019 U	0.00015 U	0.00016 U	0.00016 U
Methylcyclohexane	--	--	--	mg/kg	0.00044 U	0.00045 U	0.00073 U	0.00072 UJ	0.00052 U	0.00045 U	0.0004 U	0.00055 U	0.0008 J	0.00081 J	0.00048 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00028 U	0.00029 U	0.00047 U	0.00046 U	0.00033 U	0.00029 U	0.00026 U	0.00035 U	0.00028 U	0.00031 U	0.00031 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.000096 U	0.000099 U	0.00016 U	0.00016 UJ	0.00011 U	0.000099 U	0.0017	0.00012 U	0.00054 J	0.00069 J	0.00011 U
o-Xylene	65	280	0.019	mg/kg	0.00014 U	0.00014 U	0.00023 U	0.00023 UJ	0.00017 U	0.00014 U	0.0009	0.00018 U	0.00018 J	0.00021 J	0.00015 U
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00013 U	0.00022 U	0.00021 UJ	0.00016 U	0.00013 U	0.00012 U	0.00017 U	0.00013 U	0.00015 U	0.00014 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00024 U	0.00025 U	0.00041 U	0.0004 U	0.00029 U	0.00025 U	0.00023 U	0.00031 U	0.00025 U	0.00027 U	0.00027 U
Toluene	490	4700	0.076	mg/kg	0.00064 J	0.00017 U	0.00032 J	0.00027 UJ	0.0002 J	0.00044 J	0.0013	0.00022 J	0.0007 J	0.00082 J	0.0002 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00034 U	0.00035 U	0.00057 U	0.00056 UJ	0.00041 U	0.00035 U	0.00031 U	0.00043 U	0.00034 U	0.00038 U	0.00037 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000087 U	0.00009 U	0.00015 U	0.00014 UJ	0.0001 U	0.00009 U	0.00008.1 U	0.00011 U	0.000088 U	0.000097 U	0.000096 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00023 U	0.00023 U	0.00038 U	0.00037 UJ	0.00027 U	0.00023 U	0.00021 U	0.00029 U	0.00023 U	0.00025 U	0.00025 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.0003 U	0.00031 U	0.0005 U	0.00049 U	0.00035 U	0.0003 U	0.00027 U	0.00037 U	0.0003 U	0.00033 U	0.00033 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00034 U	0.00035 U	0.00057 U	0.00056 UJ	0.00041 U	0.00035 U	0.00031 U	0.00043 U	0.00034 U	0.00038 U	0.00037 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-019a	CFMW-019a	CFMW-022	CFMW-022	CFMW-022	CFMW-023a	CFMW-023a	CFMW-025a	CFMW-025a	CFMW-026	CFMW-026
			Sample Date:	5/25/2016	5/25/2016	6/2/2016	6/2/2016	6/2/2016	6/17/2016	6/17/2016	7/13/2016	7/13/2016	6/14/2016	6/14/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2
			Sample Designation:	CFMW-019a-SO-10-12	CFMW-DUP5-SO	CFMW-022-SO-0.5-2	CFMW-DUP12-SO	CFMW-022-SO-10-12	CFMW-023a-SO-0.5-2	CFMW-023a-SO-10-12	CFMW-025a-SO-0.5-2	CFMW-025a-SO-10-12	CFMW-026-SO-0.5-2	CFMW-DUP15-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00039 U	0.00034 U	0.00032 U	0.00034 U	0.00029 U	0.0003 U	0.00036 U	0.00035 U	0.00032 U	0.0004 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00013 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00018 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00045 U	0.0004 U	0.00037 U	0.00039 U	0.00034 U	0.00035 U	0.00041 U	0.00041 U	0.00037 U	0.00046 U	0.00045 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00029 U	0.00025 U	0.00024 U	0.00025 U	0.00021 U	0.00022 U	0.00026 U	0.00026 U	0.00024 U	0.00029 U	0.00029 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00035 U	0.00031 U	0.00029 U	0.0003 U	0.00026 U	0.00027 U	0.00032 U	0.00032 U	0.00029 U	0.00036 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00042 U	0.00037 U	0.00034 U	0.00036 U	0.00031 U	0.00033 U	0.00039 U	0.00038 U	0.00035 U	0.00043 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00011 U	0.000099 U	0.000093 U	0.000097 U	0.000084 UJ	0.000088 U	0.0001 U	0.0001 U	0.000093 U	0.00011 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00033 U	0.00029 U	0.00027 U	0.00028 U	0.00025 UJ	0.00025 U	0.0003 U	0.0003 U	0.00027 U	0.00033 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00048 U	0.00042 U	0.0004 U	0.00042 U	0.00036 U	0.00037 U	0.00044 U	0.00044 U	0.0004 U	0.00049 U	0.00048 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00014 U	0.00013 U	0.00012 U	0.00012 U	0.00011 UJ	0.00011 U	0.00013 U	0.00013 U	0.00012 U	0.00015 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00011 U	0.000099 U	0.000093 U	0.000097 U	0.000084 U	0.000088 U	0.0001 U	0.0001 U	0.000093 U	0.00011 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00013 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00018 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00012 U	0.00011 U	0.0001 U	0.00011 U	0.000092 UJ	0.000096 U	0.00011 U	0.00011 U	0.0001 U	0.00013 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.00012 U	0.0001 UJ	0.0001 U	0.00012 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00079 U	0.00069 U	0.00065 U	0.00068 U	0.00059 U	0.0018 J	0.0052	0.0025 J	0.00065 U	0.0053	0.0065
2-Hexanone	20	130	0.00088	mg/kg	0.00097 U	0.00085 U	0.00079 U	0.00083 U	0.00072 U	0.00075 U	0.00088 U	0.00087 U	0.00079 U	0.00098 U	0.00096 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0023 U	0.002 U	0.0019 U	0.002 U	0.0017 U	0.0018 U	0.0021 U	0.0021 U	0.0019 U	0.0023 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.0011 U	0.049 J	0.02	0.022	0.00081 U	0.024 J+	0.049 J+	0.034	0.0057	0.11 J+	0.17 J+
Benzene	1.2	5.1	0.00023	mg/kg	0.00021 U	0.0009 J	0.00017 U	0.00018 U	0.00015 U	0.00016 U	0.00019 U	0.00019 U	0.0003 J	0.00034 J	0.001 J
Bromoform	19	86	0.00087	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.00012 U	0.0001 U	0.0001 U	0.00012 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00033 UJ	0.00029 UJ	0.00027 U	0.00028 U	0.00025 U	0.00025 U	0.0003 U	0.0003 U	0.00027 U	0.00033 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.00044 U	0.00039 U	0.0014 J	0.0024 J	0.00033 U	0.00034 U	0.00055 J	0.0004 U	0.00036 U	0.00045 UJ	0.0016 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00044 U	0.00039 U	0.00036 U	0.00038 U	0.00033 U	0.00034 U	0.0004 U	0.0004 U	0.00036 U	0.00045 U	0.00044 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00014 U	0.00013 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U	0.00013 U	0.00012 U	0.00015 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00013 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00018 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00011 U	0.00012 U	0.00014 U	0.00014 U	0.00013 U	0.00016 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00036 UJ	0.00032 UJ	0.00029 U	0.00031 U	0.00027 U	0.00028 U	0.00033 U	0.00033 U	0.0003 U	0.00037 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00022 U	0.00019 U	0.00018 U	0.00019 U	0.00016 U	0.00017 U	0.0002 U	0.0002 U	0.00018 U	0.00022 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.00039 U	0.00034 U	0.00032 U	0.00034 U	0.00029 U	0.0003 U	0.00036 U	0.00035 U	0.00032 U	0.0004 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00023 U	0.0002 U	0.00019 U	0.00019 U	0.00017 U	0.00018 U	0.00021 U	0.0002 U	0.00019 U	0.00023 U	0.00023 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00011 U	0.00012 U	0.00014 U	0.00014 U	0.00013 U	0.00016 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00047 U	0.00041 U	0.00039 U	0.00041 U	0.00035 U	0.00037 U	0.00043 U	0.00043 U	0.00086	0.00048 U	0.00047 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00039 U	0.00034 U	0.00032 U	0.00034 U	0.00029 U	0.0003 U	0.00036 U	0.00035 U	0.00032 U	0.0004 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00033 U	0.00029 U	0.00027 U	0.00028 U	0.00025 U	0.00025 U	0.0003 U	0.0003 U	0.00027 U	0.00033 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00018 U	0.00016 U	0.00015 U	0.00016 U	0.00014 U	0.00014 U	0.00017 U	0.00017 U	0.00044 J	0.00019 U	0.00018 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00012 U	0.00011 U	0.0001 U	0.00011 U	0.000092 U	0.000096 U	0.00011 U	0.00011 U	0.0001 U	0.00013 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00013 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00018 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00092 U	0.0058 J	0.00076 U	0.0008 U	0.00069 U	0.012	0.00085 U	0.0024 J	0.00076 U	0.023 J	0.0018 J
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00013 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00018 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.00051 U	0.00045 U	0.00042 U	0.00047 J	0.00038 U	0.0004 U	0.00047 U	0.00046 U	0.0016	0.00052 U	0.00051 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00033 U	0.00029 U	0.00027 U	0.00028 U	0.00025 U	0.00025 U	0.0003 U	0.0003 U	0.00027 U	0.00033 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00011 U	0.000099 U	0.00012 J	0.0002 J	0.000084 U	0.000088 U	0.0001 U	0.0001 U	0.0016	0.00011 U	0.00011 U
o-Xylene	65	280	0.019	mg/kg	0.00016 U	0.00014 U	0.00013 U	0.00014 U	0.00012 U	0.00013 U	0.00015 U	0.00015 U	0.00052 J	0.00017 U	0.00016 U
Styrene	600	3500	0.13	mg/kg	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00011 U	0.00012 U	0.00014 U	0.00014 U	0.00013 U	0.00016 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00029 U	0.00025 U	0.00024 U	0.00025 U	0.00021 U	0.00022 U	0.00026 U	0.00026 U	0.00024 U	0.00029 U	0.00029 U
Toluene	490	4700	0.076	mg/kg	0.0002 U	0.00027 J	0.00021 J	0.00036 J	0.00022 J	0.00016 J	0.00032 J	0.00018 U	0.0019	0.0002 UJ	0.00034 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.0004 U	0.00035 U	0.00033 U	0.00035 U	0.0003 U	0.00031 U	0.00037 U	0.00036 U	0.00033 U	0.00041 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.0001 U	0.00009 U	0.000084 U	0.000089 U	0.000077 U	0.00008 U	0.000094 U	0.000093 U	0.000084 U	0.0001 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00027 U	0.00023 U	0.00022 U	0.00023 U	0.0002 U	0.00021 U	0.00024 U	0.00024 U	0.00022 U	0.00027 U	0.00027 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00035 U	0.00031 U	0.00029 U	0.0003 U	0.00026 U	0.00027 U	0.00032 U	0.00032 U	0.00029 U	0.00036 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.0004 U	0.00035 U	0.00033 U	0.00035 U	0.0003 U	0.00031 U	0.00037 U	0.00036 U	0.00033 U	0.00041 U	0.0004 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-026	CFMW-027	CFMW-027	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-029	CFMW-029	CFMW-032a	CFMW-032a
			Sample Date:	6/14/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	5/18/2016	5/18/2016	8/8/2016	8/8/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	4.5 - 6	10 - 12	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFMW-026-SO-10-12	CFMW-027-SO-0.5-2	CFMW-027-SO-10-12	CFMW-028a-SO-0.5-2	CFMW-028a-SO-4.5-6	CFMW-028a-SO-10-12	CFMW-DUP19-SO	CFMW-029-SO-0.5-2.0	CFMW-029-SO-10-12	CFMW-032a-SO-0.5-2	CFMW-032a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.0003 U	0.00047 U	0.00033 U	0.00034 UJ	0.00092 U	0.00036 U	0.00031 U	0.00032 U	0.00035 U	0.00032 U	0.00037 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00014 U	0.00021 U	0.00015 U	0.00015 UJ	0.00041 U	0.00016 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00035 U	0.00054 U	0.00038 U	0.0004 UJ	0.0011 U	0.00042 U	0.00036 U	0.00037 U	0.00041 U	0.00037 U	0.00043 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00022 U	0.00035 U	0.00024 U	0.00025 UJ	0.00068 U	0.00027 U	0.00023 U	0.00023 U	0.00026 U	0.00024 U	0.00028 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00027 U	0.00042 U	0.00029 U	0.00031 UJ	0.00082 U	0.00032 U	0.00028 U	0.00028 U	0.00032 U	0.00029 U	0.00033 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00033 U	0.00051 U	0.00035 U	0.00037 UJ	0.00099 U	0.00039 U	0.00033 U	0.00034 U	0.00038 U	0.00035 U	0.0004 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000088 UJ	0.00014 U	0.000095 U	0.000099 UJ	0.00027 U	0.0001 U	0.000089 U	0.000092 U	0.0001 U	0.000093 UJ	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00026 UJ	0.0004 U	0.00028 U	0.00029 UJ	0.00077 U	0.0003 U	0.00026 U	0.00027 U	0.0003 U	0.00027 UJ	0.00031 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00038 U	0.00058 U	0.0004 U	0.00042 UJ	0.0011 U	0.00045 U	0.00038 U	0.00039 U	0.00044 U	0.0004 U	0.00046 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00011 U	0.00017 U	0.00012 U	0.00013 UJ	0.00034 U	0.00013 U	0.00011 U	0.00012 U	0.00013 U	0.00012 UJ	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000088 U	0.00014 U	0.000095 U	0.000099 U	0.00027 U	0.0001 U	0.000089 U	0.000092 U	0.0001 U	0.000093 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00014 U	0.00021 U	0.00015 U	0.00015 UJ	0.00041 U	0.00016 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.000096 U	0.00015 U	0.0001 U	0.00011 UJ	0.00029 U	0.00011 U	0.000097 U	0.0001 U	0.00011 U	0.0001 UJ	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.0001 U	0.00016 U	0.00011 U	0.00012 UJ	0.00031 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U	0.00011 UJ	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0037 J	0.034	0.00066 U	0.0026 J	0.0019 U	0.00073 U	0.00062 U	0.00064 U	0.00072 U	0.00065 U	0.00076 U
2-Hexanone	20	130	0.00088	mg/kg	0.00075 U	0.0036 J	0.00081 U	0.00084 UJ	0.0023 U	0.00089 U	0.00076 U	0.00079 U	0.00087 U	0.00079 U	0.00092 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0018 U	0.0027 U	0.0019 U	0.002 UJ	0.0054 U	0.0021 U	0.0018 U	0.0019 U	0.0021 U	0.0019 U	0.0022 U
Acetone	6100	67000	0.29	mg/kg	0.022 J+	0.15	0.01	0.033 J	0.046	0.0097	0.0081	0.033	0.0092	0.0071	0.017
Benzene	1.2	5.1	0.00023	mg/kg	0.00069 J	0.00025 U	0.00017 U	0.00018 UJ	0.00048 U	0.00032 J	0.00027 J	0.00038 J	0.00019 U	0.00017 U	0.0002 U
Bromoform	19	86	0.00087	mg/kg	0.0001 U	0.00016 U	0.00011 U	0.00012 U	0.00031 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U	0.00011 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00026 U	0.0004 U	0.00028 U	0.00029 U	0.00077 U	0.0003 U	0.00026 U	0.00027 U	0.0003 U	0.00027 U	0.00031 U
Carbon disulfide	77	350	0.024	mg/kg	0.0004 J	0.00092 J	0.00037 U	0.00039 U	0.001 U	0.00041 U	0.00035 U	0.00072 J	0.00071 J	0.00036 U	0.00042 UJ
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00034 U	0.00053 U	0.00037 U	0.00039 UJ	0.001 U	0.00041 U	0.00035 U	0.00036 U	0.0004 U	0.00036 U	0.00042 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00011 U	0.00017 U	0.00012 U	0.00013 UJ	0.0012 J	0.00013 U	0.00011 U	0.00012 U	0.00013 U	0.00012 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00014 U	0.00021 U	0.00015 U	0.00015 UJ	0.00041 U	0.00016 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00012 U	0.00019 U	0.00013 U	0.00013 U	0.00036 U	0.00014 U	0.00012 U	0.00013 U	0.00014 U	0.00013 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00028 U	0.00043 U	0.0003 U	0.00031 U	0.00084 U	0.00033 U	0.00028 U	0.00029 U	0.00033 U	0.0003 U	0.00034 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00017 U	0.00026 U	0.00018 U	0.00019 UJ	0.00051 U	0.0002 U	0.00017 U	0.00018 U	0.0002 U	0.00018 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.0003 U	0.00047 U	0.00033 U	0.00034 U	0.00092 U	0.00036 U	0.00031 U	0.00032 U	0.00035 U	0.00032 U	0.00037 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00018 U	0.00027 U	0.00019 U	0.0002 UJ	0.00053 U	0.00021 U	0.00018 U	0.00018 U	0.0002 U	0.00019 U	0.00022 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00012 U	0.00019 U	0.00013 U	0.00013 UJ	0.00036 U	0.00014 U	0.00012 U	0.00013 U	0.00014 U	0.00013 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.0021 J+	0.00057 U	0.0004 U	0.00041 UJ	0.0011 U	0.00074 J	0.0007 J	0.00038 U	0.00043 U	0.00039 U	0.00045 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.0003 U	0.00047 U	0.00033 U	0.00034 UJ	0.00092 U	0.00036 U	0.00031 U	0.00032 U	0.00035 U	0.00032 U	0.00037 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00026 U	0.0004 U	0.00028 U	0.00029 U	0.00077 U	0.0003 U	0.00026 U	0.00027 U	0.0003 U	0.00027 U	0.00031 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.001	0.00022 U	0.00016 U	0.00016 UJ	0.00043 U	0.00022 J	0.00025 J	0.00015 U	0.00017 U	0.00015 U	0.00018 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.000096 U	0.00015 U	0.0001 U	0.00011 UJ	0.00029 U	0.00011 U	0.000097 U	0.0001 U	0.00011 U	0.0001 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00014 U	0.00021 U	0.00015 U	0.00015 UJ	0.00041 U	0.00016 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00072 U	0.0065	0.00078 U	0.0023 J	0.0022 U	0.00086 U	0.00073 U	0.00075 U	0.015	0.00076 U	0.00088 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00014 U	0.00021 U	0.00015 U	0.00015 U	0.00041 U	0.00016 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.0032 J	0.00062 U	0.00052 J	0.00045 UJ	0.0012 U	0.0012	0.0012	0.00042 J	0.00046 U	0.00042 U	0.00049 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00026 U	0.0004 U	0.00028 U	0.00029 UJ	0.0026	0.0003 U	0.00026 U	0.00027 U	0.0003 U	0.00027 U	0.00031 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.0036	0.00016 J	0.00046 J	0.000099 UJ	0.00037 J	0.00091 J	0.00082	0.000092 U	0.0001 U	0.000093 U	0.00011 U
o-Xylene	65	280	0.019	mg/kg	0.0011	0.0002 U	0.00019 J	0.00014 UJ	0.00039 U	0.00026 J	0.00025 J	0.00013 U	0.00015 U	0.00014 U	0.00016 U
Styrene	600	3500	0.13	mg/kg	0.00012 U	0.00019 U	0.00013 U	0.00013 UJ	0.00036 U	0.00014 U	0.00012 U	0.00013 U	0.00014 U	0.00013 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00022 U	0.00035 U	0.00024 U	0.00025 UJ	0.0011 J	0.00027 U	0.00023 U	0.00023 U	0.00026 U	0.00024 U	0.00028 U
Toluene	490	4700	0.076	mg/kg	0.0043	0.00041 J	0.0006 J	0.00017 UJ	0.00053 J	0.0012	0.0011	0.00048 J	0.00038 J	0.00016 U	0.00019 U
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00031 U	0.00048 U	0.00034 U	0.00035 UJ	0.00094 U	0.00037 U	0.00032 U	0.00033 U	0.00036 U	0.00033 U	0.00038 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00008 U	0.00012 U	0.000086 U	0.00009 UJ	0.00024 U	0.000095 U	0.00008.1 U	0.000084 U	0.000093 U	0.000085 U	0.000098 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00021 U	0.00032 U	0.00022 U	0.00023 UJ	0.00063 U	0.00025 U	0.00021 U	0.00022 U	0.00024 U	0.00022 U	0.00026 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00027 U	0.00042 U	0.00029 U	0.00031 U	0.00082 U	0.00032 U	0.00028 U	0.00028 U	0.00032 U	0.00029 U	0.00033 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00031 U	0.00048 U	0.00034 U	0.00035 U	0.00094 U	0.00037 U	0.00032 U	0.00033 U	0.00036 U	0.00033 U	0.00038 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and MDEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-032a	CFMW-033	CFMW-033	CFMW-034	CFMW-034	CFMW-034	CFMW-035	CFMW-035	CFMW-037	CFMW-037	CFMW-038
			Sample Date:	8/8/2016	7/1/2016	7/1/2016	5/31/2016	5/31/2016	5/31/2016	6/1/2016	6/1/2016	6/24/2016	6/24/2016	6/25/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFMW-Dup21-SO	CFMW-033-SO-0.5-2	CFMW-033-SO-10-12	CFMW-034-SO-0.5-2	CFMW-DUP10-SO	CFMW-034-SO-10-12	CFMW-035-SO-0.5-2	CFMW-035-SO-10-12	CFMW-037-SO-0.5-2	CFMW-037-SO-10-12	CFMW-038-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00044 U	0.00037 U	0.00035 U	0.00038 U	0.00038 U	0.00032 U	0.00042 U	0.00035 U	0.0003 U	0.00028 U	0.00029 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.0002 U	0.00017 U	0.00016 U	0.00017 U	0.00017 U	0.00015 U	0.00019 U	0.00016 U	0.00013 U	0.00012 U	0.00013 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00051 U	0.00043 U	0.00041 U	0.00044 U	0.00044 U	0.00038 U	0.00049 U	0.0004 U	0.00034 U	0.00032 U	0.00033 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00032 U	0.00027 U	0.00026 U	0.00028 U	0.00028 U	0.00024 U	0.00031 U	0.00026 U	0.00022 U	0.0002 U	0.00021 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00039 U	0.00033 U	0.00032 U	0.00034 U	0.00034 U	0.00029 U	0.00038 U	0.00031 U	0.00027 U	0.00025 U	0.00026 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00047 U	0.0004 U	0.00038 U	0.00041 U	0.00041 U	0.00035 U	0.00046 U	0.00038 U	0.00032 U	0.0003 U	0.00031 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00013 U	0.00011 U	0.0001 U	0.00011 U	0.00011 U	0.000094 U	0.00012 U	0.0001 UJ	0.000086 U	0.00008 U	0.000083 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00037 U	0.00031 U	0.0003 U	0.00032 U	0.00032 U	0.00027 U	0.00036 U	0.00029 UJ	0.00025 U	0.00023 U	0.00024 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00054 U	0.00046 U	0.00044 U	0.00047 U	0.00047 U	0.0004 U	0.00052 U	0.00043 U	0.00037 U	0.00034 U	0.00035 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00016 U	0.00014 U	0.00013 U	0.00014 U	0.00014 U	0.00012 U	0.00016 U	0.00013 U	0.00011 U	0.0001 U	0.00011 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00013 U	0.00011 U	0.0001 U	0.00011 U	0.00011 U	0.000094 U	0.00012 U	0.0001 U	0.000086 U	0.00008 U	0.000083 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.0002 U	0.00017 U	0.00016 U	0.00017 U	0.00017 U	0.00015 U	0.00019 U	0.00016 U	0.00013 U	0.00012 U	0.00013 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00014 U	0.00012 U	0.00011 U	0.00012 U	0.00012 U	0.0001 U	0.00013 U	0.00011 U	0.000094 U	0.000088 U	0.000091 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00015 U	0.00013 U	0.00012 U	0.00013 U	0.00013 U	0.00011 U	0.00014 U	0.00012 U	0.0001 U	0.000095 U	0.000098 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00088 U	0.00075 U	0.00072 U	0.00077 U	0.00078 U	0.00066 U	0.00086 U	0.00071 U	0.0006 U	0.0019 J	0.0012 J
2-Hexanone	20	130	0.00088	mg/kg	0.0011 U	0.00091 U	0.00088 U	0.00094 U	0.00095 U	0.0008 U	0.001 U	0.00086 U	0.00073 U	0.00069 U	0.00071 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0025 U	0.0022 U	0.0021 U	0.0022 U	0.0022 U	0.0019 U	0.0025 U	0.002 U	0.0017 U	0.0016 U	0.0017 U
Acetone	6100	67000	0.29	mg/kg	0.019	0.013	0.011	0.0096	0.01	0.00091 U	0.0012 U	0.00098 U	0.011	0.013	0.017
Benzene	1.2	5.1	0.00023	mg/kg	0.00023 U	0.00019 U	0.00026 J	0.00043 J	0.00041 J	0.00023 J	0.00022 U	0.00018 U	0.00028 J	0.00044 J	0.00031 J
Bromoform	19	86	0.00087	mg/kg	0.00015 U	0.00013 U	0.00012 U	0.00013 U	0.00013 U	0.00011 U	0.00014 U	0.00012 U	0.0001 U	0.000095 U	0.000098 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00037 U	0.00031 U	0.0003 U	0.00032 U	0.00032 U	0.00027 U	0.00036 U	0.00029 U	0.00025 U	0.00023 U	0.00024 U
Carbon disulfide	77	350	0.024	mg/kg	0.0017 J	0.00042 U	0.00055 J	0.00043 U	0.00043 U	0.00037 U	0.00048 U	0.0004 U	0.00034 U	0.00031 U	0.00067 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00049 U	0.00042 U	0.0004 U	0.00043 U	0.00043 U	0.00037 U	0.00048 U	0.0004 U	0.00034 U	0.00031 U	0.00032 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00016 U	0.00014 U	0.00013 U	0.00014 U	0.00014 U	0.00012 U	0.00016 U	0.00013 U	0.00011 U	0.0001 U	0.00011 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.0002 U	0.00017 U	0.00016 U	0.00017 U	0.00017 U	0.00015 U	0.00019 U	0.00016 U	0.00013 U	0.00012 U	0.00013 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00015 U	0.00013 U	0.00017 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U
Chloroethane	1400	5700	0.59	mg/kg	0.0004 U	0.00034 U	0.00033 U	0.00035 U	0.00035 U	0.0003 U	0.00039 UJ	0.00032 U	0.00027 U	0.00026 U	0.00026 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00024 U	0.0002 U	0.0002 U	0.00021 U	0.00021 U	0.00018 U	0.00023 U	0.00019 U	0.00016 U	0.00015 U	0.00016 U
Chloromethane	11	46	0.0049	mg/kg	0.00044 U	0.00037 U	0.00035 U	0.00038 U	0.00038 U	0.00032 U	0.00042 U	0.00035 U	0.0003 U	0.00028 U	0.00029 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00025 U	0.00021 U	0.0002 U	0.00022 U	0.00022 U	0.00019 U	0.00025 U	0.0002 U	0.00017 U	0.00016 U	0.00017 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00015 U	0.00013 U	0.00017 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U
Cyclohexane	650	2700	1.3	mg/kg	0.00053 U	0.00045 U	0.00072 J	0.00046 U	0.00046 U	0.00078 J	0.00051 U	0.00042 U	0.0006 J	0.0009	0.00039 J
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00044 U	0.00037 U	0.00035 U	0.00038 U	0.00038 U	0.00032 U	0.00042 U	0.00035 U	0.0003 U	0.00028 U	0.00029 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00037 U	0.00031 U	0.0003 U	0.00032 U	0.00032 U	0.00027 U	0.00036 U	0.00029 U	0.00025 U	0.00023 U	0.00024 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00021 U	0.00018 U	0.00017 U	0.00018 U	0.00018 U	0.00029 J	0.0002 U	0.00017 U	0.00014 U	0.00016 J	0.00014 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00014 U	0.00012 U	0.00011 U	0.00012 U	0.00012 U	0.0001 U	0.00013 U	0.00011 U	0.000094 U	0.000088 U	0.000091 U
Isopropylbenzene	190	990	0.074	mg/kg	0.0002 U	0.00017 U	0.00016 U	0.00017 U	0.00017 U	0.00015 U	0.00019 U	0.00016 U	0.00013 U	0.00012 U	0.00013 U
Methyl acetate	7800	120000	0.41	mg/kg	0.001 U	0.00088 U	0.00084 U	0.0009 U	0.00091 U	0.00077 U	0.001 U	0.00083 U	0.0007 U	0.00066 U	0.00068 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.0002 U	0.00017 U	0.00016 U	0.00017 U	0.00017 U	0.00015 U	0.00019 U	0.00016 U	0.00013 U	0.00012 U	0.00013 U
Methylcyclohexane	--	--	--	mg/kg	0.00057 U	0.00049 U	0.00053 J	0.0012	0.00076 J	0.0015	0.00056 U	0.00046 U	0.00083	0.0011	0.00068 J
Methylene Chloride	35	320	0.0027	mg/kg	0.00037 U	0.00031 U	0.0003 U	0.00032 U	0.00032 U	0.00027 U	0.00036 U	0.00029 U	0.00025 U	0.00023 U	0.00024 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00013 U	0.00021 J	0.00043 J	0.00024 J	0.00015 J	0.0011	0.0003 J	0.00015 J	0.000086 U	0.0004 J	0.000083 U
o-Xylene	65	280	0.019	mg/kg	0.00018 U	0.00016 U	0.00016 J	0.00016 U	0.00016 U	0.00035 J	0.00018 U	0.00015 U	0.00012 U	0.00015 J	0.00012 U
Styrene	600	3500	0.13	mg/kg	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00015 U	0.00013 U	0.00017 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00032 U	0.00027 U	0.00026 U	0.00028 U	0.00032 J	0.00024 U	0.00031 U	0.00026 U	0.00022 U	0.0002 U	0.00021 U
Toluene	490	4700	0.076	mg/kg	0.00022 U	0.00037 J	0.00091 J	0.00069 J	0.00048 J	0.0014	0.00032 J	0.00024 J	0.00065 J	0.00091	0.00048 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00045 U	0.00038 U	0.00036 U	0.00039 U	0.00039 U	0.00033 U	0.00043 U	0.00036 U	0.0003 U	0.00028 U	0.00029 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00011 U	0.000097 U	0.000093 U	0.0001 U	0.0001 U	0.000085 U	0.00011 U	0.000092 U	0.000078 U	0.000073 U	0.000076 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.0003 U	0.00025 U	0.00024 U	0.00026 U	0.00026 U	0.00022 U	0.00029 U	0.00024 U	0.0002 U	0.00019 U	0.0002 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00039 U	0.00033 U	0.00032 U	0.00034 U	0.00034 U	0.00029 U	0.00038 U	0.00031 U	0.00027 U	0.00025 U	0.00026 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00045 U	0.00038 U	0.00036 U	0.00039 U	0.00039 U	0.00033 U	0.00043 U	0.00036 U	0.0003 U	0.00028 U	0.00029 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-038	CFMW-040	CFMW-040	CFMW-042	CFMW-042	CFMW-042	CFMW-043	CFMW-043	CFMW-044a	CFMW-044a	CFMW-045a
			Sample Date:	6/25/2016	6/28/2016	6/28/2016	6/16/2016	6/16/2016	6/16/2016	6/15/2016	6/15/2016	7/20/2016	7/20/2016	8/12/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFMW-038-SO-10-12	CFMW-040-SO-0.5-2	CFMW-040-SO-10-12	CFMW-042-SO-0.5-2	CFMW-DUP16-SO	CFMW-042-SO-10-12	CFMW-043-SO-0.5-2	CFMW-043-SO-10-12	CFMW-044a-SO-0.5-2	CFMW-044a-SO-10-12	CFMW-045a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.0003 U	0.00038 U	0.00032 U	0.00037 U	0.00034 U	0.00019 U	0.00027 U	0.0003 U	0.00032 U	0.00037 U	0.00029 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00013 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.000087 U	0.00012 U	0.00013 U	0.00014 U	0.00016 U	0.00013 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00035 U	0.00043 U	0.00037 U	0.00043 U	0.00039 U	0.00022 UJ	0.00032 U	0.00034 U	0.00037 U	0.00042 U	0.00033 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00022 U	0.00028 U	0.00024 U	0.00027 U	0.00025 U	0.00014 U	0.0002 U	0.00022 U	0.00024 U	0.00027 U	0.00021 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00027 U	0.00034 U	0.00029 U	0.00033 U	0.0003 U	0.00017 U	0.00024 U	0.00026 U	0.00029 U	0.00033 U	0.00026 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00032 U	0.00041 U	0.00034 U	0.0004 U	0.00036 U	0.00021 U	0.00029 U	0.00032 U	0.00035 U	0.00039 U	0.00031 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000087 U	0.00011 U	0.000092 U	0.00011 U	0.000098 U	0.000056 UJ	0.000079 U	0.000086 U	0.000093 UJ	0.00011 UJ	0.000083 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00025 U	0.00032 U	0.00027 U	0.00031 U	0.00028 U	0.00016 UJ	0.00023 U	0.00025 U	0.00027 U	0.00031 U	0.00024 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00037 U	0.00046 U	0.0004 U	0.00046 U	0.00042 U	0.00024 U	0.00034 U	0.00037 U	0.0004 U	0.00045 U	0.00035 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.000072 UJ	0.0001 U	0.00011 U	0.00012 U	0.00013 U	0.00011 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000087 U	0.00011 U	0.000092 U	0.00011 U	0.000098 U	0.000056 U	0.000079 U	0.000086 U	0.000093 U	0.00011 U	0.000083 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00013 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.000087 U	0.00012 U	0.00013 U	0.00014 U	0.00016 U	0.00013 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.000095 U	0.00012 U	0.0001 U	0.00012 U	0.00011 U	0.000061 UJ	0.000086 U	0.000094 U	0.0001 U	0.00012 U	0.00009 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.0001 U	0.00013 U	0.00011 U	0.00013 U	0.00012 U	0.000066 UJ	0.000093 U	0.0001 U	0.00011 U	0.00013 U	0.000098 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0017 J	0.0018 J	0.002 J	0.00075 UJ	0.004 J	0.00039 U	0.00055 U	0.0006 U	0.00065 U	0.00074 U	0.0023 J
2-Hexanone	20	130	0.00088	mg/kg	0.00074 U	0.00093 U	0.00079 U	0.00091 U	0.00083 U	0.00048 U	0.00067 U	0.00073 U	0.0008 U	0.0009 U	0.00071 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0018 U	0.0022 U	0.0019 U	0.0022 U	0.002 U	0.0011 U	0.0016 U	0.0017 U	0.0019 U	0.0021 U	0.0017 U
Acetone	6100	67000	0.29	mg/kg	0.011	0.022 J+	0.014 J+	0.041	0.039	0.0057	0.048	0.0063	0.017 J+	0.014 J+	0.017
Benzene	1.2	5.1	0.00023	mg/kg	0.00043 J	0.0002 U	0.00035 J	0.00034 J	0.00018 UJ	0.00019 J	0.00034 J	0.00048 J	0.00017 U	0.00052 J	0.00035 J
Bromoform	19	86	0.00087	mg/kg	0.0001 U	0.00013 U	0.00011 U	0.00013 U	0.00012 U	0.000066 U	0.000093 U	0.0001 U	0.00011 UJ	0.00013 UJ	0.000098 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00025 U	0.00032 U	0.00027 U	0.00031 UJ	0.00028 UJ	0.00016 UJ	0.00023 UJ	0.00025 UJ	0.00027 U	0.00031 U	0.00024 U
Carbon disulfide	77	350	0.024	mg/kg	0.00044 J	0.00042 UJ	0.00037 J	0.00042 UJ	0.0025 J	0.00056	0.00031 U	0.00034 U	0.00037 U	0.00041 U	0.00032 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00034 U	0.00042 UJ	0.00036 UJ	0.00042 U	0.00038 U	0.00022 UJ	0.00031 U	0.00034 U	0.00037 U	0.00041 U	0.00032 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.000072 UJ	0.0001 U	0.00011 U	0.00012 U	0.00013 U	0.00011 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00013 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.000087 U	0.00012 U	0.00013 U	0.00014 U	0.00016 U	0.00013 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00012 U	0.00015 U	0.00013 U	0.00015 U	0.00013 U	0.000077 U	0.00011 U	0.00012 U	0.00013 U	0.00014 U	0.00011 U
Chloroethane	1400	5700	0.59	mg/kg	0.00028 U	0.00035 U	0.00029 U	0.00034 UJ	0.00031 UJ	0.00018 UJ	0.00025 UJ	0.00027 UJ	0.0003 U	0.00034 U	0.00026 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00017 U	0.00021 U	0.00018 U	0.0002 U	0.00019 U	0.00011 U	0.00015 U	0.00016 U	0.00018 U	0.0002 U	0.00016 U
Chloromethane	11	46	0.0049	mg/kg	0.0003 U	0.00038 UJ	0.00032 UJ	0.00037 UJ	0.00034 UJ	0.00019 UJ	0.00027 UJ	0.0003 UJ	0.00032 U	0.00037 U	0.00029 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00017 U	0.00022 U	0.00018 U	0.00021 U	0.0002 U	0.00011 U	0.00016 U	0.00017 U	0.00019 U	0.00021 U	0.00017 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00012 U	0.00015 U	0.00013 U	0.00015 U	0.00013 U	0.000077 U	0.00011 U	0.00012 U	0.00013 U	0.00014 U	0.00011 U
Cyclohexane	650	2700	1.3	mg/kg	0.00081	0.00045 U	0.00039 U	0.00045 U	0.00041 U	0.00082	0.00033 U	0.00036 U	0.00039 U	0.0014	0.00035 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.0003 U	0.00038 U	0.00032 U	0.00037 U	0.00034 U	0.00019 U	0.00027 U	0.0003 U	0.00032 U	0.00037 U	0.00029 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00025 U	0.00032 U	0.00027 U	0.00031 UJ	0.00028 UJ	0.00016 UJ	0.00023 UJ	0.00025 UJ	0.00027 UJ	0.00031 UJ	0.00024 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00014 U	0.00018 U	0.00015 U	0.00017 U	0.00016 U	0.00015 J-	0.00013 U	0.00052 J	0.00015 U	0.00034 J	0.00014 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.000095 U	0.00012 U	0.0001 U	0.00012 U	0.00011 U	0.000061 U	0.000086 U	0.000094 U	0.0001 U	0.00012 U	0.00009 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00013 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.000087 UJ	0.00012 U	0.00013 U	0.00014 U	0.00016 U	0.00013 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00071 U	0.00089 U	0.00076 U	0.00087 U	0.0008 U	0.00046 U	0.00065 U	0.0007 U	0.00076 U	0.00087 U	0.0067
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00013 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.000087 U	0.00012 U	0.00013 U	0.00014 U	0.00016 U	0.00013 U
Methylcyclohexane	--	--	--	mg/kg	0.00049 J	0.00049 U	0.00042 J	0.00077 J	0.00082 J	0.00077 J-	0.00036 U	0.0022	0.00042 U	0.0018	0.00038 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00025 U	0.00032 U	0.00027 U	0.00031 U	0.00028 U	0.00016 U	0.00023 U	0.00025 U	0.00027 U	0.00031 U	0.00024 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.000087 U	0.00011 U	0.00021 J	0.00011 U	0.000098 U	0.00065 J-	0.000079 U	0.0018	0.000093 U	0.0013	0.000083 U
o-Xylene	65	280	0.019	mg/kg	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00014 U	0.00017 J-	0.00011 U	0.00052 J	0.00014 U	0.00038 J	0.00012 U
Styrene	600	3500	0.13	mg/kg	0.00012 U	0.00015 U	0.00013 U	0.00015 U	0.00013 U	0.000077 UJ	0.00011 U	0.00012 U	0.00013 U	0.00014 U	0.00011 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00022 U	0.00028 U	0.00024 U	0.00027 U	0.00025 U	0.00014 UJ	0.0002 U	0.00022 U	0.00024 U	0.00027 U	0.00021 U
Toluene	490	4700	0.076	mg/kg	0.00085	0.00019 U	0.00061 J	0.00059 J	0.00065 J	0.00063	0.00014 U	0.0022	0.00016 U	0.0018	0.00014 U
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00031 U	0.00039 U	0.00033 U	0.00038 U	0.00035 U	0.0002 U	0.00028 U	0.0003 U	0.00033 U	0.00038 U	0.00029 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000079 U	0.000099 U	0.000084 U	0.000097 U	0.000089 U	0.000051 U	0.000072 U	0.000078 U	0.000085 U	0.000096 U	0.000075 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00021 U	0.00026 U	0.00022 U	0.00025 U	0.00023 U	0.00013 UJ	0.00019 U	0.0002 U	0.00022 U	0.00025 U	0.0002 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00027 U	0.00034 U	0.00029 U	0.00033 U	0.0003 U	0.00017 U	0.00024 U	0.00026 U	0.00029 U	0.00033 U	0.00026 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00031 U	0.00039 UJ	0.00033 UJ	0.00038 U	0.00035 U	0.0002 U	0.00028 U	0.0003 U	0.00033 U	0.00038 U	0.00029 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-045a	CFMW-047	CFMW-047	CFMW-049a	CFMW-049a	CFMW-050	CFMW-050	CFMW-050	CFMW-053a	CFMW-053a	CFMW-053a
			Sample Date:	8/12/2016	6/21/2016	6/21/2016	8/20/2016	8/20/2016	6/22/2016	6/22/2016	6/22/2016	8/17/2016	8/17/2016	8/17/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2	10 - 12
			Sample Designation:	CFMW-045a-SO-10-12	CFMW-047-SO-0.5-2	CFMW-047-SO-10-12	CFMW-049a-SO-0.5-2	CFMW-049a-SO-10-12	CFMW-050-SO-0.5-2	CFMW-DUP17-SO	CFMW-050-SO-10-12	CFMW-DUP22-SO	CFMW-053a-SO-0.5-2	CFMW-053a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00034 U	0.00034 U	0.00031 U	0.0003 U	0.00037 U	0.00051 U	0.00033 U	0.00033 U	0.00037 U	0.00045 U	0.00035 UJ
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00023 U	0.00015 U	0.00015 U	0.00017 U	0.0002 U	0.00016 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00039 U	0.00039 U	0.00036 U	0.00035 U	0.00043 U	0.0006 U	0.00038 U	0.00038 U	0.00043 U	0.00052 U	0.00041 UJ
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00025 U	0.00025 U	0.00023 U	0.00022 U	0.00027 U	0.00038 U	0.00024 U	0.00024 U	0.00028 U	0.00033 U	0.00026 UJ
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.0003 U	0.0003 U	0.00028 U	0.00027 U	0.00033 U	0.00046 U	0.0003 U	0.00029 U	0.00033 U	0.0004 U	0.00031 UJ
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00037 U	0.00037 U	0.00033 U	0.00033 U	0.0004 U	0.00056 U	0.00036 U	0.00035 U	0.0004 U	0.00048 U	0.00038 UJ
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000099 U	0.000098 U	0.000089 U	0.000088 U	0.00011 UJ	0.00015 U	0.000095 U	0.000094 U	0.00011 U	0.00013 U	0.0001 UJ
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00029 U	0.00029 U	0.00026 U	0.00026 U	0.00031 UJ	0.00043 U	0.00028 U	0.00027 U	0.00031 U	0.00038 U	0.00029 UJ
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00042 U	0.00042 U	0.00038 U	0.00038 U	0.00045 U	0.00064 U	0.00041 U	0.0004 U	0.00046 U	0.00055 U	0.00043 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.00011 U	0.00014 UJ	0.00019 U	0.00012 U	0.00012 U	0.00014 U	0.00017 U	0.00013 UJ
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000099 U	0.000098 U	0.000089 U	0.000088 U	0.00011 U	0.00015 U	0.000095 U	0.000094 U	0.00011 U	0.00013 U	0.0001 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00023 U	0.00015 U	0.00015 U	0.00017 U	0.0002 U	0.00016 UJ
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.00011 U	0.000098 U	0.000096 U	0.00012 U	0.00016 U	0.0001 U	0.0001 U	0.00012 U	0.00014 U	0.00011 UJ
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00012 U	0.00012 U	0.00011 U	0.0001 U	0.00013 U	0.00018 U	0.00011 U	0.00011 U	0.00013 UJ	0.00015 UJ	0.00012 UJ
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0029 J	0.0075	0.0025 J	0.0018 J	0.00075 U	0.0063 J	0.0043	0.0019 J	0.0034 J	0.0034 J	0.0029 J
2-Hexanone	20	130	0.00088	mg/kg	0.00084 U	0.00084 U	0.00076 U	0.00075 U	0.00091 U	0.0013 U	0.00082 U	0.00081 U	0.00093 U	0.0011 U	0.00087 UJ
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.002 U	0.002 U	0.0018 U	0.0018 U	0.0021 U	0.003 U	0.0019 U	0.0019 U	0.0022 U	0.0026 U	0.002 UJ
Acetone	6100	67000	0.29	mg/kg	0.017	0.11 J+	0.013 J+	0.014	0.001 U	0.072 J+	0.06 J+	0.016 J+	0.042	0.036	0.012 J
Benzene	1.2	5.1	0.00023	mg/kg	0.00046 J	0.0009	0.00056 J	0.0013 J	0.00019 U	0.0009 J	0.00037 J	0.00065 J	0.00064 J	0.00052 J	0.00062 J
Bromoform	19	86	0.00087	mg/kg	0.00012 U	0.00012 U	0.00011 U	0.0001 U	0.00013 U	0.00018 U	0.00011 U	0.00011 U	0.00013 U	0.00015 U	0.00012 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00029 U	0.00029 U	0.00026 UJ	0.00026 U	0.00031 U	0.00043 U	0.00028 U	0.00027 U	0.00031 U	0.00038 U	0.00029 U
Carbon disulfide	77	350	0.024	mg/kg	0.0006 J	0.0006 J	0.00095	0.00045 J	0.00042 U	0.00058 U	0.00037 U	0.00037 U	0.0011 J	0.00051 UJ	0.0004 UJ
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00039 U	0.00038 U	0.00035 U	0.00034 U	0.00042 U	0.00058 U	0.00037 U	0.00037 U	0.00042 U	0.00051 U	0.0004 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.00011 U	0.00014 U	0.00019 U	0.00012 U	0.00012 U	0.00014 U	0.00017 U	0.00013 UJ
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00023 U	0.00015 U	0.00015 U	0.00017 U	0.0002 U	0.00016 UJ
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00013 U	0.00012 U	0.00012 U	0.00015 U	0.0002 U	0.00013 U	0.00013 U	0.00015 U	0.00018 U	0.00014 U
Chloroethane	1400	5700	0.59	mg/kg	0.00031 U	0.00031 U	0.00028 U	0.00028 U	0.00034 U	0.00047 U	0.0003 U	0.0003 U	0.00034 U	0.00041 U	0.00032 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00019 U	0.00019 U	0.00017 U	0.00017 U	0.0002 U	0.00028 U	0.00018 U	0.00018 U	0.00021 U	0.00025 U	0.00019 UJ
Chloromethane	11	46	0.0049	mg/kg	0.00034 U	0.00034 U	0.00031 U	0.0003 U	0.00037 U	0.00051 U	0.00033 U	0.00033 U	0.00037 U	0.00045 U	0.00035 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.0002 U	0.0002 U	0.00018 U	0.00018 U	0.00021 U	0.0003 U	0.00019 U	0.00019 U	0.00022 U	0.00026 U	0.0002 UJ
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00013 U	0.00012 U	0.00012 U	0.00015 U	0.0002 U	0.00013 U	0.00013 U	0.00015 U	0.00018 U	0.00014 UJ
Cyclohexane	650	2700	1.3	mg/kg	0.0012	0.00041 U	0.00037 U	0.0055 J	0.00045 U	0.00062 U	0.0004 U	0.00082 J	0.00045 U	0.00054 U	0.00042 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00034 U	0.00034 U	0.00031 U	0.0003 U	0.00037 U	0.00051 U	0.00033 U	0.00033 U	0.00037 U	0.00045 U	0.00035 UJ
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00029 U	0.00029 U	0.00026 U	0.00026 U	0.00031 U	0.00043 U	0.00028 U	0.00027 U	0.00031 U	0.00038 U	0.00029 UJ
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00043 J	0.00016 U	0.00054 J	0.00039 J	0.00017 U	0.00024 U	0.00016 U	0.00033 J	0.00018 U	0.00021 U	0.00029 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.00011 U	0.000098 U	0.000096 U	0.00012 U	0.00016 U	0.0001 U	0.0001 U	0.00012 U	0.00014 U	0.00011 UJ
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00023 U	0.00015 U	0.00015 U	0.00017 U	0.0002 U	0.00016 UJ
Methyl acetate	7800	120000	0.41	mg/kg	0.00081 U	0.0045	0.00073 U	0.00072 UJ	0.00087 U	0.0016 J	0.0025 J	0.00077 U	0.00089 U	0.0011 U	0.00083 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00023 U	0.00015 U	0.00015 U	0.00017 U	0.0002 U	0.00016 UJ
Methylcyclohexane	--	--	--	mg/kg	0.0013	0.00045 U	0.0017	0.0076 J	0.00048 U	0.00068 U	0.00043 U	0.0011	0.00055 J	0.00059 U	0.0017 J
Methylene Chloride	35	320	0.0027	mg/kg	0.00029 U	0.00029 U	0.00026 U	0.00026 U	0.00031 U	0.00043 U	0.00028 U	0.00027 U	0.00031 U	0.00038 U	0.00029 UJ
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00092	0.000098 U	0.0014	0.0011	0.00011 U	0.00031 J	0.000095 UJ	0.00096	0.00011 U	0.00013 U	0.00044 J
o-Xylene	65	280	0.019	mg/kg	0.00036 J	0.00014 U	0.00057 J	0.00034 J	0.00015 U	0.00022 U	0.00014 U	0.00033 J	0.00016 U	0.00019 U	0.00017 J
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00013 U	0.00012 U	0.00012 U	0.00015 U	0.0002 U	0.00013 U	0.00013 U	0.00015 U	0.00018 U	0.00014 UJ
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00025 U	0.00025 U	0.00023 U	0.00022 U	0.00027 U	0.00038 U	0.00024 U	0.00024 U	0.00028 U	0.00033 U	0.00026 UJ
Toluene	490	4700	0.076	mg/kg	0.0015	0.00058 J	0.002	0.0024	0.00033 J	0.00094 J	0.00028 J	0.0015	0.00044 J	0.00045 J	0.0011 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00035 U	0.00035 U	0.00032 U	0.00031 U	0.00038 U	0.00053 U	0.00034 U	0.00033 U	0.00038 U	0.00046 U	0.00036 UJ
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00009 U	0.000089 U	0.00008.1 U	0.00008 U	0.000097 U	0.00014 U	0.000087 U	0.000086 U	0.000098 U	0.00012 U	0.000092 UJ
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00023 U	0.00023 U	0.00021 U	0.00021 U	0.00025 U	0.00035 U	0.00023 U	0.00022 U	0.00026 U	0.00031 U	0.00024 UJ
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.0003 U	0.0003 U	0.00028 U	0.00027 U	0.00033 U	0.00046 U	0.0003 U	0.00029 U	0.00033 U	0.0004 U	0.00031 UJ
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00035 U	0.00035 U	0.00032 U	0.00031 U	0.00038 U	0.00053 U	0.00034 U	0.00033 UJ	0.00038 U	0.00046 U	0.00036 UJ

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-054	CFMW-054	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-057a	CFMW-057a	CFMW-059a	CFMW-059a	CFMW-061	CFMW-061
					Sample Date:	6/20/2016	6/20/2016	7/15/2016	7/15/2016	7/15/2016	7/27/2016	7/27/2016	7/22/2016	7/22/2016	7/12/2016	7/12/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
					Sample Designation:	CFMW-054-SO-0.5-2	CFMW-054-SO-10-12	CFMW-DUP20-SO	CFMW-056a-SO-0.5-2	CFMW-056a-SO-10-12	CFMW-057a-SO-0.5-2	CFMW-057a-SO-10-12	CFMW-059a-SO-0.5-2	CFMW-059a-SO-10-12	CFMW-061-SO-0.5-2	CFMW-061-SO-10-12
1,1,1-Trichloroethane	810	3600	0.28	mg/kg		0.00047 U	0.00029 U	0.00046 U	0.00038 U	0.00035 U	0.00033 U	0.00033 U	0.00034 U	0.00033 U	0.00032 U	0.00027 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg		0.00021 U	0.00013 U	0.00021 UJ	0.00017 UJ	0.00016 UJ	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00014 U	0.00012 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg		0.00055 U	0.00033 U	0.00053 U	0.00044 U	0.00041 U	0.00038 U	0.00039 U	0.00039 U	0.00038 U	0.00037 U	0.00032 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg		0.00035 U	0.00021 U	0.00034 U	0.00028 U	0.00026 U	0.00024 U	0.00025 U	0.00025 U	0.00024 U	0.00024 U	0.0002 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg		0.00042 U	0.00026 U	0.00041 U	0.00034 U	0.00032 U	0.0003 U	0.0003 U	0.0003 U	0.00029 U	0.00029 U	0.00024 U
1,1-Dichloroethene	23	100	0.01	mg/kg		0.00051 U	0.00031 U	0.0005 U	0.00041 U	0.00038 U	0.00036 U	0.00036 U	0.00036 U	0.00035 U	0.00034 U	0.00029 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg		0.00014 U	0.000083 U	0.00013 UJ	0.00011 UJ	0.0001 UJ	0.000096 U	0.000097 U	0.000097 U	0.000094 U	0.000092 U	0.000079 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg		0.0004 U	0.00024 U	0.00039 U	0.00032 U	0.0003 UJ	0.00028 U	0.00028 U	0.00028 U	0.00027 U	0.00027 U	0.00023 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg		0.00058 U	0.00035 U	0.00057 U	0.00047 U	0.00044 U	0.00041 U	0.00041 UJ	0.00042 UJ	0.0004 UJ	0.00039 U	0.00034 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg		0.00017 U	0.00011 U	0.00017 U	0.00014 U	0.00013 U	0.00012 U	0.00012 UJ	0.00012 U	0.00012 U	0.00012 U	0.0001 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg		0.00014 J	0.000083 U	0.00013 U	0.00011 U	0.0001 U	0.000096 U	0.000097 U	0.000097 U	0.000094 U	0.000092 U	0.000079 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg		0.00021 U	0.00013 U	0.00021 U	0.00017 U	0.00016 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00014 U	0.00012 U
1,3-Dichlorobenzene	--	--	--	mg/kg		0.00015 U	0.00009 U	0.00014 U	0.00012 U	0.00011 U	0.0001 U	0.00011 U	0.00011 U	0.0001 U	0.0001 U	0.000086 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg		0.00016 U	0.000098 U	0.00016 U	0.00013 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U	0.00011 U	0.00011 U	0.000093 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg		0.0043 J	0.0019 J	0.00093 U	0.00077 U	0.00072 U	0.0022 J	0.0044 J-	0.00068 U	0.00066 U	0.0076	0.0043
2-Hexanone	20	130	0.00088	mg/kg		0.0012 U	0.00071 U	0.0011 U	0.00094 U	0.00087 U	0.00082 U	0.00083 U	0.00083 U	0.00081 U	0.00079 U	0.0011 J
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg		0.0028 U	0.0017 U	0.0027 U	0.0022 U	0.0021 U	0.0019 U	0.002 UJ	0.002 U	0.0019 U	0.0019 U	0.0016 U
Acetone	6100	67000	0.29	mg/kg		0.056 J+	0.011 J+	0.0013 U	0.034 J+	0.00099 U	0.025	0.0069 J-	0.051	0.01	0.074 J+	0.021 J+
Benzene	1.2	5.1	0.00023	mg/kg		0.00092 J	0.00072 J	0.00024 U	0.0002 U	0.00019 U	0.00017 U	0.00018 U	0.00018 U	0.00036 J	0.00052 J	0.00078
Bromoform	19	86	0.00087	mg/kg		0.00016 U	0.000098 U	0.00016 UJ	0.00013 UJ	0.00012 UJ	0.00011 U	0.00011 UJ	0.00012 U	0.00011 U	0.00011 U	0.000093 U
Bromomethane	0.68	3	0.00019	mg/kg		0.0004 U	0.00024 U	0.00039 U	0.00032 U	0.0003 U	0.00028 U	0.00028 U	0.00028 U	0.00027 U	0.00027 U	0.00023 U
Carbon disulfide	77	350	0.024	mg/kg		0.00053 U	0.00098	0.00052 U	0.00043 U	0.0004 U	0.00037 U	0.00038 U	0.00038 U	0.00056 J	0.00052 J	0.00093
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg		0.00053 U	0.00032 U	0.00052 UJ	0.00043 UJ	0.0004 UJ	0.00037 U	0.00038 U	0.00038 U	0.00037 U	0.00036 U	0.00031 U
Chlorobenzene	28	130	0.0053	mg/kg		0.00017 U	0.00011 U	0.00017 U	0.00014 U	0.00013 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.0001 U
Chlorobromomethane	15	63	0.0021	mg/kg		0.00021 U	0.00013 U	0.00021 U	0.00017 U	0.00016 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00014 U	0.00012 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg		0.00019 U	0.00011 U	0.00018 UJ	0.00015 UJ	0.00014 UJ	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00011 U
Chloroethane	1400	5700	0.59	mg/kg		0.00043 U	0.00026 U	0.00042 U	0.00035 U	0.00033 U	0.0003 U	0.00031 U	0.00031 U	0.0003 U	0.00029 U	0.00025 U
Chloroform	0.32	1.4	0.000061	mg/kg		0.00026 U	0.00016 U	0.00025 U	0.00021 U	0.0002 U	0.00018 U	0.00018 U	0.00019 U	0.00018 U	0.00018 U	0.00015 U
Chloromethane	11	46	0.0049	mg/kg		0.00047 U	0.00029 U	0.00046 U	0.00038 U	0.00035 U	0.00033 U	0.00033 U	0.00034 U	0.00033 U	0.00032 U	0.00027 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg		0.00027 U	0.00017 U	0.00027 U	0.00022 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00018 U	0.00016 U
cis-1,3-Dichloropropene	--	--	--	mg/kg		0.00019 U	0.00011 U	0.00018 U	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00011 U
Cyclohexane	650	2700	1.3	mg/kg		0.00057 U	0.0027	0.00056 U	0.00046 U	0.00044 J	0.0004 U	0.00041 U	0.00041 U	0.00039 U	0.00092	0.0017
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg		0.00047 U	0.00029 U	0.00046 U	0.00038 U	0.00035 U	0.00033 U	0.00033 U	0.00034 U	0.00033 U	0.00032 U	0.00027 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg		0.0004 U	0.00024 U	0.00039 UJ	0.00032 UJ	0.0003 UJ	0.00028 U	0.00028 U	0.00028 U	0.00027 U	0.00027 U	0.00023 U
Ethylbenzene	5.8	25	0.0017	mg/kg		0.00022 U	0.0013	0.00022 U	0.00018 U	0.00017 U	0.00016 U	0.00016 U	0.00016 U	0.0003 J	0.00015 U	0.00055 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg		0.00015 U	0.00009 U	0.00014 U	0.00012 U	0.00011 U	0.0001 U	0.00011 U	0.00011 U	0.0001 U	0.0001 U	0.000086 U
Isopropylbenzene	190	990	0.074	mg/kg		0.00021 U	0.00019 J	0.00021 U	0.00017 U	0.00016 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00014 U	0.00012 U
Methyl acetate	7800	120000	0.41	mg/kg		0.0025 J	0.00068 U	0.0011 U	0.0009 U	0.00084 U	0.00078 U	0.00079 U	0.0008 U	0.00077 U	0.00076 U	0.00065 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg		0.00021 U	0.00013 U	0.00021 U	0.00017 U	0.00016 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00014 U	0.00012 U
Methylcyclohexane	--	--	--	mg/kg		0.00062 U	0.0047	0.0006 U	0.0005 U	0.0005 J	0.00043 U	0.00044 U	0.00044 U	0.0012	0.0009	0.0025
Methylene Chloride	35	320	0.0027	mg/kg		0.0004 U	0.00024 U	0.00039 U	0.00032 U	0.0003 U	0.00028 U	0.00028 U	0.00028 U	0.00027 U	0.00027 U	0.00023 U
m-Xylene & p-Xylene	56	240	--	mg/kg		0.0003 J	0.0033	0.00013 U	0.00011 U	0.0001 U	0.000096 U	0.00026 J	0.000097 U	0.001	0.00034 J	0.0014
o-Xylene	65	280	0.019	mg/kg		0.00028 J	0.0011	0.00019 U	0.00016 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.00033 J	0.00013 U	0.00043 J
Styrene	600	3500	0.13	mg/kg		0.00019 U	0.00011 U	0.00018 U	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00011 U
Tetrachloroethene	8.1	39	0.0018	mg/kg		0.00035 U	0.00021 U	0.00034 U	0.00028 U	0.00026 U	0.00024 U	0.00025 U	0.00025 U	0.00024 U	0.00024 U	0.0002 U
Toluene	490	4700	0.076	mg/kg		0.00082 J	0.0044	0.00023 U	0.00019 U	0.0006 J	0.00017 U	0.00053 J	0.0011	0.0014	0.0011	0.0025
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg		0.00048 U	0.00029 U	0.00047 U	0.00039 U	0.00036 U	0.00034 U	0.00034 U	0.00035 U	0.00033 U	0.00033 U	0.00028 U
trans-1,3-Dichloropropene	--	--	--	mg/kg		0.00012 U	0.000075 U	0.00012 U	0.0001 U	0.000093 U	0.000087 U	0.000088 U	0.000089 U	0.000086 U	0.000084 U	0.000072 U
Trichloroethene	0.41	1.9	0.0001	mg/kg		0.00032 U	0.0002 U	0.00031 U	0.00026 U	0.00024 U	0.00023 U	0.00023 U	0.00023 U	0.00022 U	0.00022 U	0.00019 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg		0.00042 U	0.00026 U	0.00041 U	0.00034 U	0.00032 U	0.0003 U	0.0003 U	0.0003 U	0.00029 U	0.00029 U	0.00024 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg		0.00048 U	0.00029 U	0.00047 U	0.00039 U	0.00036 U	0.00034 U	0.00034 U	0.00035 U	0.00033 U	0.00033 U	0.00028 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-064	CFMW-064	CFSB-001	CFSB-001	CFSB-002	CFSB-002	CFSB-003	CFSB-003	CFSB-004	CFSB-004	CFSB-005
			Sample Date:	7/11/2016	7/11/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFMW-064-SO-0.5-2	CFMW-064-SO-10-12	CFSB-001-SO-0.5-2	CFSB-001-SO-10-12	CFSB-002-SO-0.5-2	CFSB-002-SO-10-12	CFSB-003-SO-0.5-2	CFSB-003-SO-10-12	CFSB-004-SO-0.5-2	CFSB-004-SO-10-12	CFSB-005-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00042 U	0.00058 U	0.00041 U	0.00033 U	0.00038 U	0.00036 U	0.00031 U	0.00034 U	0.00043 U	0.00038 U	0.00032 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00019 U	0.00026 U	0.00018 U	0.00015 U	0.00017 U	0.00016 U	0.00014 U	0.00015 U	0.00019 U	0.00017 U	0.00014 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00048 UJ	0.00068 UJ	0.00047 U	0.00038 U	0.00044 U	0.00042 U	0.00036 U	0.00039 U	0.00049 U	0.00044 U	0.00037 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00031 U	0.00043 U	0.0003 U	0.00024 U	0.00028 U	0.00027 U	0.00023 U	0.00025 U	0.00031 U	0.00028 U	0.00024 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00037 U	0.00052 U	0.00036 U	0.00029 U	0.00034 U	0.00032 U	0.00028 U	0.00031 U	0.00038 U	0.00034 U	0.00029 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00045 U	0.00063 U	0.00044 U	0.00036 U	0.00041 U	0.00039 U	0.00034 U	0.00037 U	0.00046 U	0.00041 U	0.00035 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00012 U	0.00017 U	0.00012 U	0.000095 U	0.00011 U	0.0001 U	0.000091 U	0.000099 U	0.00012 U	0.00011 U	0.000093 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00035 U	0.00049 U	0.00034 U	0.00028 U	0.00032 U	0.0003 U	0.00026 U	0.00029 U	0.00036 U	0.00032 U	0.00027 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00052 U	0.00072 U	0.0005 U	0.00041 U	0.00047 U	0.00045 U	0.00039 U	0.00042 U	0.00053 U	0.00047 U	0.0004 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00015 U	0.00021 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U	0.00012 U	0.00013 U	0.00016 U	0.00014 U	0.00012 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00012 U	0.00017 U	0.00012 U	0.000095 U	0.00011 U	0.0001 U	0.000091 U	0.000099 U	0.00012 U	0.00011 U	0.000093 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00019 U	0.00026 U	0.00018 U	0.00015 U	0.00017 U	0.00016 U	0.00014 U	0.00015 U	0.00019 U	0.00017 U	0.00014 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00013 U	0.00018 U	0.00013 U	0.0001 U	0.00012 U	0.00011 U	0.000099 U	0.00011 U	0.00013 U	0.00012 U	0.0001 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00014 U	0.0002 U	0.00014 U	0.00011 U	0.00013 U	0.00012 U	0.00011 U	0.00012 U	0.00015 U	0.00013 U	0.00011 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.011	0.014	0.00083 U	0.00067 U	0.00077 U	0.00073 U	0.00064 U	0.00069 U	0.00086 U	0.00077 U	0.00065 U
2-Hexanone	20	130	0.00088	mg/kg	0.001 U	0.0014 U	0.001 U	0.00081 U	0.00094 U	0.00089 U	0.00078 U	0.00084 U	0.0011 U	0.00093 U	0.00079 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0024 U	0.0034 U	0.0024 U	0.0019 U	0.0022 U	0.0021 U	0.0018 U	0.002 U	0.0025 U	0.0022 U	0.0019 U
Acetone	6100	67000	0.29	mg/kg	0.18	0.098	0.029	0.0051	0.041	0.009	0.041	0.0039 J	0.019	0.0058	0.033
Benzene	1.2	5.1	0.00023	mg/kg	0.0017	0.0022	0.00021 U	0.00017 U	0.0002 U	0.00019 U	0.0003 J	0.00018 U	0.00038 J	0.0002 U	0.00017 U
Bromoform	19	86	0.00087	mg/kg	0.00014 U	0.0002 U	0.00014 U	0.00011 U	0.00013 U	0.00012 U	0.00011 U	0.00012 U	0.00015 U	0.00013 U	0.00011 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00035 UJ	0.00049 UJ	0.00034 UJ	0.00028 UJ	0.00032 UJ	0.0003 UJ	0.00026 UJ	0.00029 UJ	0.00036 UJ	0.00032 UJ	0.00027 UJ
Carbon disulfide	77	350	0.024	mg/kg	0.0015 J-	0.00088 J-	0.00046 U	0.00037 U	0.00043 U	0.00041 U	0.00036 U	0.00039 U	0.0022	0.00043 U	0.001
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00047 U	0.00066 U	0.00046 U	0.00037 U	0.00043 U	0.00041 U	0.00036 U	0.00039 U	0.00048 U	0.00043 U	0.00036 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00015 U	0.00021 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U	0.00012 U	0.00013 U	0.00016 U	0.00014 U	0.00012 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00019 U	0.00026 U	0.00018 U	0.00015 U	0.00017 U	0.00016 U	0.00014 U	0.00015 U	0.00019 U	0.00017 U	0.00014 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00017 U	0.00023 U	0.00016 U	0.00013 U	0.00015 U	0.00014 U	0.00012 U	0.00013 U	0.00017 U	0.00015 U	0.00013 U
Chloroethane	1400	5700	0.59	mg/kg	0.00039 U	0.00054 U	0.00038 UJ	0.0003 UJ	0.00035 UJ	0.00033 UJ	0.00029 UJ	0.00031 UJ	0.00039 UJ	0.00035 UJ	0.00029 UJ
Chloroform	0.32	1.4	0.000061	mg/kg	0.00023 U	0.00032 U	0.00023 U	0.00018 U	0.00021 U	0.0002 U	0.00017 U	0.00019 U	0.00024 U	0.00021 U	0.00018 U
Chloromethane	11	46	0.0049	mg/kg	0.00042 U	0.00058 U	0.00041 U	0.00033 U	0.00038 U	0.00036 U	0.00031 U	0.00034 U	0.00043 U	0.00038 U	0.00032 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00024 U	0.00034 U	0.00024 U	0.00019 U	0.00022 U	0.00021 U	0.00018 U	0.0002 U	0.00025 U	0.00022 U	0.00019 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00017 U	0.00023 U	0.00016 U	0.00013 U	0.00015 U	0.00014 U	0.00012 U	0.00013 U	0.00017 U	0.00015 U	0.00013 U
Cyclohexane	650	2700	1.3	mg/kg	0.0025 J-	0.0077 J-	0.00049 U	0.0004 U	0.00046 U	0.00044 U	0.00038 U	0.00041 U	0.00052 U	0.00046 U	0.00039 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00042 U	0.00058 U	0.00041 U	0.00033 U	0.00038 U	0.00036 U	0.00031 U	0.00034 U	0.00043 U	0.00038 U	0.00032 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00035 U	0.00049 U	0.00034 U	0.00028 U	0.00032 U	0.0003 U	0.00026 U	0.00029 U	0.00036 U	0.00032 U	0.00027 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00083 J	0.0032	0.00019 U	0.00016 U	0.00018 U	0.00017 U	0.00015 U	0.00016 U	0.0002 U	0.00018 U	0.00015 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00013 U	0.00018 U	0.00013 U	0.0001 U	0.00012 U	0.00011 U	0.000099 U	0.00011 U	0.00013 U	0.00012 U	0.0001 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00019 U	0.00039 J	0.00018 U	0.00015 U	0.00017 U	0.00016 U	0.00014 U	0.00015 U	0.00019 U	0.00017 U	0.00014 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00099 U	0.0014 U	0.00096 U	0.00078 U	0.0009 U	0.00085 U	0.00074 U	0.00081 U	0.001 U	0.00089 U	0.00076 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00019 U	0.00026 U	0.00018 U	0.00015 U	0.00017 U	0.00016 U	0.00014 U	0.00015 U	0.00019 U	0.00017 U	0.00014 U
Methylcyclohexane	--	--	--	mg/kg	0.004	0.012	0.00054 U	0.00043 U	0.0005 U	0.00047 U	0.00041 U	0.00045 U	0.001 J	0.0005 U	0.00042 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00035 U	0.00049 U	0.00034 U	0.00028 U	0.00032 U	0.0003 U	0.00026 U	0.00029 U	0.00036 U	0.00032 U	0.00027 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.0024	0.008	0.00012 U	0.000095 U	0.00011 U	0.00015 J	0.000091 U	0.00013 J	0.00048 J	0.00011 U	0.00014 J
o-Xylene	65	280	0.019	mg/kg	0.00078 J	0.0028	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.00013 U	0.00014 U	0.00018 U	0.00016 U	0.00013 U
Styrene	600	3500	0.13	mg/kg	0.00017 U	0.00023 U	0.00016 U	0.00013 U	0.00015 U	0.00014 U	0.00012 U	0.00013 U	0.00017 U	0.00015 U	0.00013 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00031 U	0.00043 U	0.0003 U	0.00024 U	0.00028 U	0.00027 U	0.00023 U	0.00025 U	0.00031 U	0.00028 U	0.00024 U
Toluene	490	4700	0.076	mg/kg	0.004	0.01	0.0002 U	0.00016 U	0.00019 U	0.00024 J	0.00025 J	0.00023 J	0.00098 J	0.00025 J	0.00034 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00043 U	0.0006 U	0.00042 U	0.00034 U	0.00039 U	0.00037 U	0.00032 U	0.00035 U	0.00044 U	0.00039 U	0.00033 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00011 U	0.00015 U	0.00011 U	0.000087 U	0.0001 U	0.000095 U	0.000083 U	0.00009 U	0.00011 U	0.000099 U	0.000084 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00029 U	0.0004 U	0.00028 U	0.00023 U	0.00026 U	0.00025 U	0.00022 U	0.00023 U	0.00029 U	0.00026 U	0.00022 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00037 UJ	0.00052 UJ	0.00036 U	0.00029 U	0.00034 U	0.00032 U	0.00028 U	0.00031 U	0.00038 U	0.00034 U	0.00029 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00043 U	0.0006 U	0.00042 U	0.00034 U	0.00039 U	0.00037 U	0.00032 U	0.00035 U	0.00044 U	0.00039 U	0.00033 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-005	CFSB-006	CFSB-006	CFSB-007	CFSB-007	CFSB-008	CFSB-008	CFSB-008	CFSB-009	CFSB-009	CFSB-010
			Sample Date:	5/25/2016	5/23/2016	5/23/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/21/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFSB-005-SO-10-12	CFSB-006-SO-0.5-2	CFSB-006-SO-10-12	CFSB-007-SO-0.5-2	CFSB-007-SO-10-12	CFSB-008-SO-0.5-2	CFSB-DUP4-SO	CFSB-008-SO-10-12	CFSB-009-SO-0.5-2	CFSB-009-SO-10-12	CFSB-010-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00032 U	0.00038 U	0.00036 U	0.0003 U	0.00031 U	0.0003 U	0.00034 U	0.00046 U	0.00029 U	0.00043 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00014 U	0.00017 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00021 U	0.00013 U	0.00019 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00037 UJ	0.00043 U	0.00042 U	0.00035 U	0.00036 U	0.00035 U	0.0004 U	0.00054 U	0.00034 U	0.0005 U	0.00045 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00024 U	0.00028 U	0.00027 U	0.00022 U	0.00023 U	0.00022 U	0.00025 U	0.00034 U	0.00022 U	0.00032 U	0.00029 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00029 U	0.00034 U	0.00032 U	0.00027 U	0.00028 U	0.00027 U	0.00031 U	0.00041 U	0.00026 U	0.00038 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00035 U	0.00041 U	0.00039 U	0.00033 U	0.00034 U	0.00032 U	0.00037 U	0.0005 U	0.00032 U	0.00046 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000093 U	0.00011 U	0.0001 U	0.000087 U	0.00009 U	0.000087 U	0.000099 U	0.00013 U	0.000085 U	0.00012 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00027 U	0.00032 U	0.0003 U	0.00025 U	0.00026 U	0.00025 U	0.00029 U	0.00039 U	0.00025 U	0.00036 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.0004 U	0.00046 U	0.00045 U	0.00037 U	0.00038 U	0.00037 U	0.00042 U	0.00057 U	0.00036 U	0.00053 U	0.00048 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00012 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U	0.00011 U	0.00013 U	0.00017 U	0.00011 U	0.00016 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000093 U	0.00011 U	0.0001 U	0.000087 U	0.00009 U	0.000087 U	0.000099 U	0.00013 U	0.000085 U	0.00012 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00014 U	0.00017 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00021 U	0.00013 U	0.00019 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.0001 U	0.00012 U	0.00011 U	0.000095 U	0.000098 U	0.000094 U	0.00011 U	0.00015 U	0.000093 U	0.00014 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00011 U	0.00013 U	0.00012 U	0.0001 U	0.00011 U	0.0001 U	0.00012 U	0.00016 U	0.0001 U	0.00015 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00065 U	0.0015 J	0.00073 U	0.00061 U	0.00063 U	0.0009 J	0.00069 U	0.00094 U	0.0006 U	0.0023 J	0.00079 U
2-Hexanone	20	130	0.00088	mg/kg	0.00079 U	0.00093 U	0.0009 U	0.00075 U	0.00077 U	0.00074 U	0.00085 U	0.0011 U	0.00073 U	0.0011 U	0.00096 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0019 U	0.0022 U	0.0021 U	0.0018 U	0.0018 U	0.0017 U	0.002 U	0.0027 U	0.0017 U	0.0025 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.0071	0.031	0.019	0.042	0.0034 J	0.048	0.045	0.014	0.022	0.031	0.027
Benzene	1.2	5.1	0.00023	mg/kg	0.00024 J	0.0002 U	0.00019 U	0.00044 J	0.00016 U	0.00024 J	0.00051 J	0.00024 U	0.00016 U	0.00047 J	0.00042 J
Bromoform	19	86	0.00087	mg/kg	0.00011 U	0.00013 U	0.00012 U	0.0001 U	0.00011 U	0.0001 U	0.00012 U	0.00016 U	0.0001 U	0.00015 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00027 UJ	0.00032 U	0.0003 U	0.00025 UJ	0.00026 UJ	0.00025 U	0.00029 U	0.00039 U	0.00025 U	0.00036 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.00036 U	0.00042 U	0.00041 U	0.00034 U	0.00035 U	0.00034 U	0.00039 U	0.00052 U	0.00033 U	0.00048 U	0.00086 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00036 U	0.00042 U	0.00041 U	0.00034 U	0.00035 U	0.00034 U	0.00039 U	0.00052 U	0.00033 U	0.00048 U	0.00044 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00012 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U	0.00011 U	0.00013 U	0.00017 U	0.00011 U	0.00016 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00014 U	0.00017 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00021 U	0.00013 U	0.00019 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00015 U	0.00014 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00018 U	0.00012 U	0.00017 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.0003 UJ	0.00035 U	0.00033 U	0.00028 UJ	0.00029 UJ	0.00028 U	0.00032 U	0.00043 U	0.00027 U	0.00039 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00018 U	0.00021 U	0.0002 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00026 U	0.00016 U	0.00024 U	0.00022 U
Chloromethane	11	46	0.0049	mg/kg	0.00032 U	0.00038 U	0.00036 U	0.0003 U	0.00031 U	0.0003 U	0.00034 U	0.00046 U	0.00029 U	0.00043 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00019 U	0.00022 U	0.00021 U	0.00017 U	0.00018 U	0.00017 U	0.0002 U	0.00027 U	0.00017 U	0.00025 U	0.00023 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00015 U	0.00014 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00018 U	0.00012 U	0.00017 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00039 UJ	0.00045 U	0.00044 U	0.00037 U	0.00038 U	0.00036 U	0.00041 U	0.00056 U	0.00036 U	0.00052 U	0.00047 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00032 U	0.00038 U	0.00036 U	0.0003 U	0.00031 U	0.0003 U	0.00034 U	0.00046 U	0.00029 U	0.00043 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00027 UJ	0.00032 U	0.0003 U	0.00025 U	0.00026 U	0.00025 U	0.00029 U	0.00039 U	0.00025 U	0.00036 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00015 U	0.00018 U	0.00017 U	0.00014 U	0.00015 U	0.00014 U	0.00016 U	0.00022 U	0.00014 U	0.0002 U	0.00043 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.0001 U	0.00012 U	0.00011 U	0.000095 U	0.000098 U	0.000094 U	0.00011 U	0.00015 U	0.000093 U	0.00014 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00014 U	0.00017 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00021 U	0.00013 U	0.00019 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00076 U	0.0031 J	0.00086 U	0.00071 U	0.00074 U	0.0029 J	0.00081 UJ	0.0011 U	0.0028 J	0.001 U	0.00092 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00014 U	0.00017 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00021 U	0.00013 U	0.00019 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.00042 UJ	0.00049 U	0.00048 U	0.0004 U	0.00041 U	0.00039 UJ	0.00078 J	0.00061 U	0.00039 U	0.00056 U	0.0006 J
Methylene Chloride	35	320	0.0027	mg/kg	0.00027 U	0.00032 U	0.0003 U	0.00025 U	0.00026 U	0.00025 U	0.00029 U	0.00054 J	0.00025 U	0.00036 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.000093 U	0.00023 J	0.00017 J	0.000087 U	0.00009 U	0.000087 UJ	0.00017 J	0.00013 U	0.000085 U	0.00012 U	0.00094 J
o-Xylene	65	280	0.019	mg/kg	0.00014 U	0.00016 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.00014 U	0.00019 U	0.00012 U	0.00018 U	0.00039 J
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00015 U	0.00014 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00018 U	0.00012 U	0.00017 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00024 U	0.00028 U	0.00027 U	0.00022 U	0.00023 U	0.00022 U	0.00025 U	0.00034 U	0.00022 U	0.00032 U	0.00029 U
Toluene	490	4700	0.076	mg/kg	0.00025 J	0.0004 J	0.00031 J	0.00024 J	0.00016 U	0.00072 J	0.00061 J	0.00023 U	0.0003 J	0.00031 J	0.0011
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00033 U	0.00039 U	0.00037 U	0.00031 U	0.00032 U	0.00031 U	0.00035 U	0.00047 U	0.0003 U	0.00044 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000084 U	0.000099 U	0.000095 U	0.000079 U	0.000082 U	0.000079 U	0.00009 U	0.00012 U	0.000078 U	0.00011 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00022 U	0.00026 U	0.00025 U	0.00021 U	0.00021 U	0.0002 U	0.00023 U	0.00032 U	0.0002 U	0.00029 U	0.00027 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00029 UJ	0.00034 U	0.00032 U	0.00027 U	0.00028 U	0.00027 U	0.00031 U	0.00041 U	0.00026 U	0.00038 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00033 U	0.00039 U	0.00037 U	0.00031 U	0.00032 U	0.00031 U	0.00035 U	0.00047 U	0.0003 U	0.00044 U	0.0004 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-010	CFSB-011	CFSB-011	CFSB-012	CFSB-012	CFSB-013	CFSB-013	CFSB-014	CFSB-014	CFSB-016	CFSB-016
			Sample Date:	5/21/2016	5/19/2016	5/19/2016	5/28/2016	5/28/2016	5/19/2016	5/19/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-010-SO-10-12	CFSB-011-SO-0.5-2.0	CFSB-011-SO-10-12	CFSB-012-SO-0.5-2	CFSB-012-SO-10-12	CFSB-013-SO-0.5-2.0	CFSB-013-SO-10-12	CFSB-014-SO-0.5-2	CFSB-014-SO-10-12	CFSB-016-SO-0.5-2	CFSB-016-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00036 U	0.00055 UJ	0.00033 U	0.00031 U	0.00047 U	0.00046 U	0.00033 U	0.00045 U	0.00035 U	0.00064 U	0.00027 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00016 U	0.00024 UJ	0.00015 U	0.00014 U	0.00021 U	0.0002 U	0.00015 U	0.0002 U	0.00016 U	0.00028 U	0.00012 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00042 U	0.00063 UJ	0.00038 U	0.00036 U	0.00055 U	0.00053 U	0.00038 U	0.00053 U	0.0004 U	0.00074 U	0.00032 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00027 U	0.0004 UJ	0.00024 U	0.00023 U	0.00035 U	0.00034 U	0.00024 U	0.00034 U	0.00026 U	0.00047 U	0.0002 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00032 U	0.00049 UJ	0.0003 U	0.00028 U	0.00042 U	0.00041 U	0.0003 U	0.00041 U	0.00031 U	0.00057 U	0.00024 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00039 U	0.00059 UJ	0.00036 U	0.00034 U	0.00051 U	0.00049 U	0.00036 U	0.00049 U	0.00037 U	0.00069 U	0.00029 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.0001 U	0.00016 UJ	0.000096 U	0.00009 U	0.00014 U	0.00013 U	0.000096 U	0.00013 U	0.0001 U	0.00018 U	0.000079 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.0003 U	0.00046 UJ	0.00028 U	0.00026 U	0.0004 U	0.00038 U	0.00028 U	0.00038 U	0.00029 U	0.00053 U	0.00023 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00044 U	0.00067 UJ	0.00041 U	0.00039 U	0.00058 U	0.00056 U	0.00041 U	0.00056 U	0.00043 U	0.00079 U	0.00034 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00013 U	0.0002 UJ	0.00012 U	0.00011 U	0.00017 U	0.00017 U	0.00012 U	0.00017 U	0.00013 U	0.00023 U	0.0001 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.0001 U	0.00016 U	0.000096 U	0.00009 U	0.00014 U	0.00013 U	0.000096 U	0.00013 U	0.0001 U	0.00018 U	0.000079 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00016 U	0.00024 UJ	0.00015 U	0.00014 U	0.00021 U	0.0002 U	0.00015 U	0.0002 U	0.00016 U	0.00028 U	0.00012 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.00017 UJ	0.0001 U	0.000099 U	0.00015 U	0.00014 U	0.0001 U	0.00014 U	0.00011 U	0.0002 U	0.000086 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00012 U	0.00019 UJ	0.00011 U	0.00011 U	0.00016 U	0.00016 U	0.00011 U	0.00016 U	0.00012 U	0.00022 U	0.000093 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00073 U	0.0011 U	0.00067 U	0.0026 J	0.00096 U	0.0034 J	0.00067 U	0.0091	0.0007 U	0.028	0.00055 U
2-Hexanone	20	130	0.00088	mg/kg	0.00089 U	0.0013 U	0.00082 U	0.00077 U	0.0012 U	0.0011 U	0.00082 U	0.0011 U	0.00086 U	0.0024 J	0.00067 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0021 U	0.0032 UJ	0.0019 U	0.0018 U	0.0028 U	0.0027 U	0.0019 U	0.0027 U	0.002 U	0.0037 U	0.0016 U
Acetone	6100	67000	0.29	mg/kg	0.013	0.042 J	0.019	0.03	0.014	0.071	0.0086	0.09	0.0054	0.19	0.0029 J
Benzene	1.2	5.1	0.00023	mg/kg	0.00048 J	0.00041 J-	0.00044 J	0.00046 J	0.00031 J	0.00024 U	0.00031 J	0.00024 U	0.00019 J	0.00033 U	0.00031 J
Bromoform	19	86	0.00087	mg/kg	0.00012 U	0.00019 U	0.00011 U	0.00011 U	0.00016 U	0.00016 U	0.00011 U	0.00016 U	0.00012 U	0.00022 U	0.000093 U
Bromomethane	0.68	3	0.00019	mg/kg	0.0003 U	0.00046 UJ	0.00028 U	0.00026 U	0.0004 U	0.00038 U	0.00028 U	0.00038 U	0.00029 U	0.00053 U	0.00023 U
Carbon disulfide	77	350	0.024	mg/kg	0.00052 J	0.00062 UJ	0.00037 U	0.00045 J	0.00063 J	0.00052 U	0.00058 J	0.00051 U	0.00039 U	0.0045	0.00031 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00041 U	0.00062 UJ	0.00037 U	0.00035 U	0.00053 U	0.00052 U	0.00037 U	0.00051 U	0.00039 U	0.00072 U	0.00031 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00013 U	0.0002 UJ	0.00012 U	0.00011 U	0.00017 U	0.00017 U	0.00012 U	0.00017 U	0.00013 U	0.00023 U	0.0001 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00016 U	0.00024 U	0.00015 U	0.00014 U	0.00021 U	0.0002 U	0.00015 U	0.0002 U	0.00016 U	0.00028 U	0.00012 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00014 U	0.00022 UJ	0.00013 U	0.00012 U	0.00019 U	0.00018 U	0.00013 U	0.00018 U	0.00014 U	0.00025 U	0.00011 U
Chloroethane	1400	5700	0.59	mg/kg	0.00033 U	0.0005 U	0.0003 U	0.00029 U	0.00043 U	0.00042 U	0.0003 U	0.00042 U	0.00032 U	0.00059 U	0.00025 UJ
Chloroform	0.32	1.4	0.000061	mg/kg	0.0002 U	0.0003 UJ	0.00018 U	0.00017 U	0.00026 U	0.00025 U	0.00018 U	0.00025 U	0.00019 U	0.00035 U	0.00015 U
Chloromethane	11	46	0.0049	mg/kg	0.00036 U	0.00055 UJ	0.00033 U	0.00031 U	0.00047 U	0.00046 U	0.00033 U	0.00045 U	0.00035 U	0.00064 U	0.00027 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00021 U	0.00032 UJ	0.00019 U	0.00018 U	0.00027 U	0.00026 U	0.00019 U	0.00026 U	0.0002 U	0.00037 U	0.00016 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00014 U	0.00022 UJ	0.00013 U	0.00012 U	0.00019 U	0.00018 U	0.00013 U	0.00018 U	0.00014 U	0.00025 U	0.00011 U
Cyclohexane	650	2700	1.3	mg/kg	0.00074 J	0.00066 UJ	0.0004 U	0.00087 J+	0.00057 U	0.00055 U	0.0004 U	0.00055 U	0.00042 U	0.00077 U	0.00055 J
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00036 U	0.00055 UJ	0.00033 U	0.00031 U	0.00047 U	0.00046 U	0.00033 U	0.00045 U	0.00035 U	0.00064 U	0.00027 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.0003 U	0.00046 UJ	0.00028 U	0.00026 U	0.0004 U	0.00038 U	0.00028 U	0.00038 U	0.00029 U	0.00053 U	0.00023 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00019 J	0.00026 UJ	0.00016 U	0.00033 J	0.00022 U	0.00022 U	0.00016 U	0.00022 U	0.00016 U	0.0003 U	0.00018 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.00017 UJ	0.0001 U	0.000099 U	0.00015 U	0.00014 U	0.0001 U	0.00014 U	0.00011 U	0.0002 U	0.000086 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00016 U	0.00024 UJ	0.00015 U	0.00014 U	0.00021 U	0.0002 U	0.00015 U	0.0002 U	0.00016 U	0.00028 U	0.00012 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00085 U	0.27 J	0.0038 J	0.00074 U	0.0011 U	0.0058 J	0.00078 U	0.0022 J	0.00082 U	0.0054 J	0.00064 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00016 U	0.00024 U	0.00015 U	0.00014 U	0.00021 U	0.0002 U	0.00015 U	0.0002 U	0.00016 U	0.00028 U	0.00012 U
Methylcyclohexane	--	--	--	mg/kg	0.001	0.00072 UJ	0.0007 J	0.0013	0.00062 U	0.0006 U	0.00043 U	0.0006 U	0.00056 J	0.00084 U	0.0011
Methylene Chloride	35	320	0.0027	mg/kg	0.0003 U	0.00046 UJ	0.00028 U	0.00026 U	0.0004 U	0.00038 U	0.00028 U	0.00038 U	0.00029 U	0.00053 U	0.00023 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00061 J	0.00016 UJ	0.00012 J	0.001	0.00049 J	0.00013 U	0.0002 J	0.00013 U	0.00032 J	0.00018 U	0.00069 J
o-Xylene	65	280	0.019	mg/kg	0.00021 J	0.00023 UJ	0.00014 U	0.00036 J	0.0002 U	0.00019 U	0.00014 U	0.00019 U	0.00015 U	0.00027 U	0.0002 J
Styrene	600	3500	0.13	mg/kg	0.00014 U	0.00022 UJ	0.00013 U	0.00012 U	0.00019 U	0.00018 U	0.00013 U	0.00018 U	0.00014 U	0.00025 U	0.00011 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00027 U	0.0004 UJ	0.00024 U	0.00023 U	0.00035 U	0.00034 U	0.00024 U	0.00034 U	0.00026 U	0.00047 U	0.0002 U
Toluene	490	4700	0.076	mg/kg	0.0013	0.00027 UJ	0.00044 J	0.0015	0.00082 J	0.00023 U	0.00039 J	0.00023 U	0.00047 J	0.00091 J	0.00094
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00037 U	0.00056 UJ	0.00034 U	0.00032 U	0.00048 U	0.00047 U	0.00034 U	0.00047 U	0.00036 U	0.00065 U	0.00028 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000095 U	0.00014 UJ	0.000087 U	0.000082 U	0.00012 U	0.00012 U	0.000087 U	0.00012 U	0.000091 U	0.00017 U	0.000072 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00025 U	0.00037 UJ	0.00023 U	0.00021 U	0.00032 U	0.00031 U	0.00023 U	0.00031 U	0.00024 U	0.00043 U	0.00019 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00032 U	0.00049 UJ	0.0003 U	0.00028 U	0.00042 U	0.00041 U	0.0003 U	0.00041 U	0.00031 U	0.00057 U	0.00024 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00037 U	0.00056 UJ	0.00034 U	0.00032 U	0.00048 U	0.00047 U	0.00034 U	0.00047 U	0.00036 U	0.00065 U	0.00028 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-019	CFSB-019	CFSB-019	CFSB-021	CFSB-021	CFSB-022	CFSB-022	CFSB-025	CFSB-025	CFSB-026	CFSB-026
			Sample Date:	6/4/2016	6/4/2016	6/13/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016
			Sample Depth (ft-bls):	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-019-SO-0.5-2	CFSB-DUP13-SO	CFSB-019-SO-10-12	CFSB-021-SO-0.5-2	CFSB-021-SO-10-12	CFSB-022-SO-0.5-2	CFSB-022-SO-10-12	CFSB-025-SO-0.5-2	CFSB-025-SO-10-12	CFSB-026-SO-0.5-2	CFSB-026-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00052 U	0.00067 U	0.00036 U	0.00042 U	0.00024 U	0.00034 U	0.00024 U	0.001 U	0.00057 U	0.00096 U	0.00032 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00023 U	0.0003 U	0.00016 U	0.00019 U	0.00011 U	0.00015 U	0.00011 U	0.00045 U	0.00025 U	0.00043 U	0.00014 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00061 U	0.00078 U	0.00042 U	0.00048 U	0.00027 U	0.0004 U	0.00028 U	0.0012 U	0.00066 U	0.0011 U	0.00037 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00039 U	0.0005 U	0.00027 U	0.00031 U	0.00017 U	0.00025 U	0.00018 U	0.00075 U	0.00042 U	0.0007 U	0.00023 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00047 U	0.0006 U	0.00033 U	0.00037 U	0.00021 U	0.00031 U	0.00022 U	0.00091 U	0.00051 U	0.00085 U	0.00028 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00057 U	0.00073 U	0.00039 U	0.00045 U	0.00026 U	0.00037 U	0.00026 U	0.0011 U	0.00061 U	0.001 U	0.00034 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00015 U	0.00019 U	0.00011 U	0.00012 U	0.000069 U	0.0001 U	0.00007 U	0.00029 U	0.00016 U	0.00028 U	0.000092 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00044 U	0.00057 U	0.00031 U	0.00035 U	0.0002 U	0.00029 U	0.0002 U	0.00086 U	0.00048 U	0.0008 U	0.00027 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00065 U	0.00083 U	0.00045 U	0.00052 U	0.00029 U	0.00043 U	0.0003 U	0.0013 U	0.0007 U	0.0012 U	0.00039 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00019 U	0.00025 U	0.00013 U	0.00015 U	0.000087 U	0.00013 U	0.000089 U	0.00037 U	0.00021 U	0.00035 U	0.00012 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00015 U	0.00019 U	0.00011 U	0.00012 U	0.000069 U	0.0001 U	0.00007 U	0.00029 U	0.00016 U	0.00028 U	0.000092 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00023 U	0.0003 U	0.00016 U	0.00019 U	0.00011 U	0.00015 U	0.00011 U	0.00045 U	0.00025 U	0.00043 U	0.00014 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00017 U	0.00021 U	0.00012 U	0.00013 U	0.000075 U	0.00011 U	0.000076 U	0.00032 U	0.00018 U	0.0003 U	0.0001 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00018 U	0.00023 U	0.00012 U	0.00014 U	0.00008.1 U	0.00012 U	0.000083 U	0.00035 U	0.00019 U	0.00033 U	0.00011 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0011 U	0.0014 U	0.0015 J	0.00085 U	0.00048 U	0.0007 U	0.00049 U	0.021	0.0016 J	0.041	0.00064 U
2-Hexanone	20	130	0.00088	mg/kg	0.0013 U	0.0017 U	0.0009 U	0.001 U	0.00059 U	0.00085 U	0.0006 U	0.0025 U	0.0014 U	0.0024 U	0.00079 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0031 U	0.0039 U	0.0021 U	0.0024 U	0.0014 U	0.002 U	0.0014 U	0.0059 U	0.0033 U	0.0056 U	0.0019 U
Acetone	6100	67000	0.29	mg/kg	0.0096	0.0088 J	0.016 J+	0.022	0.0065	0.023	0.0059	0.25 J+	0.012 J+	0.31 J+	0.014 J+
Benzene	1.2	5.1	0.00023	mg/kg	0.0012 J	0.00095 J	0.00048 J	0.00022 U	0.00012 U	0.00018 U	0.00013 U	0.00054 U	0.0003 U	0.0005 U	0.0004 J
Bromoform	19	86	0.00087	mg/kg	0.00018 U	0.00023 U	0.00012 U	0.00014 U	0.00008.1 U	0.00012 U	0.000083 U	0.00035 U	0.00019 UJ	0.00033 U	0.00011 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00044 U	0.00057 U	0.00031 U	0.00035 U	0.0002 U	0.00029 U	0.0002 U	0.00086 U	0.00048 U	0.0008 U	0.00027 U
Carbon disulfide	77	350	0.024	mg/kg	0.00059 U	0.00076 U	0.00041 U	0.00047 U	0.00027 U	0.00039 U	0.00027 U	0.0033	0.00064 U	0.0038	0.00036 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00059 U	0.00076 U	0.00041 U	0.00047 U	0.00027 U	0.00039 U	0.00027 U	0.0012 U	0.00064 U	0.0011 U	0.00036 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00019 U	0.00025 U	0.00013 U	0.00015 U	0.000087 U	0.00013 U	0.000089 U	0.00037 U	0.00021 U	0.00035 U	0.00012 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00023 U	0.0003 U	0.00016 U	0.00019 U	0.00011 U	0.00015 U	0.00011 U	0.00045 U	0.00025 U	0.00043 U	0.00014 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00021 U	0.00027 U	0.00014 U	0.00017 U	0.000093 U	0.00014 U	0.000095 U	0.0004 U	0.00022 U	0.00038 U	0.00013 U
Chloroethane	1400	5700	0.59	mg/kg	0.00048 U	0.00062 U	0.00034 U	0.00039 U	0.00022 U	0.00032 U	0.00022 U	0.00094 U	0.00052 U	0.00088 U	0.00029 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00029 U	0.00037 U	0.0002 U	0.00023 U	0.00013 U	0.00019 U	0.00013 U	0.00056 U	0.00031 U	0.00053 U	0.00018 U
Chloromethane	11	46	0.0049	mg/kg	0.00052 U	0.00067 U	0.00036 U	0.00042 U	0.00024 U	0.00034 U	0.00024 U	0.001 U	0.00057 U	0.00096 U	0.00032 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.0003 U	0.00039 U	0.00021 U	0.00024 U	0.00014 U	0.0002 U	0.00014 U	0.00059 U	0.00033 U	0.00055 U	0.00018 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00021 U	0.00027 U	0.00014 U	0.00017 U	0.000093 U	0.00014 U	0.000095 U	0.0004 U	0.00022 U	0.00038 U	0.00013 U
Cyclohexane	650	2700	1.3	mg/kg	0.0027	0.0026	0.0013 J+	0.00051 U	0.00029 U	0.00042 U	0.00029 U	0.0012 U	0.00069 U	0.0012 U	0.001 J+
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00052 U	0.00067 U	0.00036 U	0.00042 U	0.00024 U	0.00034 U	0.00024 U	0.001 U	0.00057 U	0.00096 U	0.00032 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00044 U	0.00057 U	0.00031 U	0.00035 U	0.0002 U	0.00029 U	0.0002 U	0.00086 U	0.00048 U	0.0008 U	0.00027 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.0015	0.0013 J	0.00045 J	0.0002 U	0.00011 U	0.00016 U	0.00011 U	0.00048 U	0.00027 U	0.00045 U	0.00047 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00017 U	0.00021 U	0.00012 U	0.00013 U	0.000075 U	0.00011 U	0.000076 U	0.00032 U	0.00018 U	0.0003 U	0.0001 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00023 U	0.0003 U	0.00016 U	0.00019 U	0.00011 U	0.00015 U	0.00011 U	0.00045 U	0.00025 U	0.00043 U	0.00014 U
Methyl acetate	7800	120000	0.41	mg/kg	0.0012 U	0.0016 U	0.00086 U	0.00099 U	0.00056 U	0.013	0.00057 U	0.0036 J+	0.0013 U	0.0043 J+	0.00075 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00023 U	0.0003 U	0.00016 U	0.00019 U	0.00011 U	0.00015 U	0.00011 U	0.00045 U	0.00025 U	0.00043 U	0.00014 U
Methylcyclohexane	--	--	--	mg/kg	0.0055	0.0055	0.0022 J+	0.00055 U	0.00031 U	0.00045 U	0.00032 U	0.0013 U	0.00074 U	0.0013 U	0.0016 J+
Methylene Chloride	35	320	0.0027	mg/kg	0.002 J	0.004 J	0.00031 U	0.00035 U	0.0002 U	0.00029 U	0.0002 U	0.00086 U	0.00048 U	0.0008 U	0.00027 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.0056	0.0051	0.0022	0.00012 U	0.000069 U	0.0001 U	0.00007 U	0.00031 J	0.00016 U	0.00028 U	0.0015
o-Xylene	65	280	0.019	mg/kg	0.0017	0.0016 J	0.0007 J	0.00018 U	0.0001 U	0.00014 U	0.0001 U	0.00043 U	0.00024 U	0.0004 U	0.00048 J
Styrene	600	3500	0.13	mg/kg	0.00021 U	0.00027 U	0.00014 U	0.00017 U	0.000093 U	0.00014 U	0.000095 U	0.0004 U	0.00022 U	0.00038 U	0.00013 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00039 U	0.0005 U	0.00027 U	0.00031 U	0.00017 U	0.00025 U	0.00018 U	0.00075 U	0.00042 U	0.0007 U	0.00023 U
Toluene	490	4700	0.076	mg/kg	0.0063	0.0056	0.0026	0.00021 U	0.00012 U	0.00017 U	0.00012 U	0.00081 J	0.00029 J	0.00061 J	0.002
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00054 U	0.00069 U	0.00037 U	0.00043 U	0.00024 U	0.00035 U	0.00025 U	0.001 U	0.00058 U	0.00098 U	0.00033 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00014 U	0.00018 U	0.000096 U	0.00011 U	0.000062 U	0.00009 U	0.000063 U	0.00027 U	0.00015 U	0.00025 U	0.000084 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00036 U	0.00046 U	0.00025 U	0.00029 U	0.00016 U	0.00024 U	0.00017 U	0.0007 U	0.00039 U	0.00065 U	0.00022 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00047 U	0.0006 U	0.00033 U	0.00037 U	0.00021 U	0.00031 U	0.00022 U	0.00091 U	0.00051 U	0.00085 U	0.00028 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00054 U	0.00069 U	0.00037 U	0.00043 U	0.00024 U	0.00035 U	0.00025 U	0.001 U	0.00058 U	0.00098 U	0.00033 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-027	CFSB-027	CFSB-028	CFSB-028	CFSB-029	CFSB-029	CFSB-030	CFSB-030	CFSB-033	CFSB-033	CFSB-034
					Sample Date:	6/13/2016	6/13/2016	7/18/2016	7/18/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	5/23/2016	5/23/2016	5/31/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
					Sample Designation:	CFSB-027-SO-0.5-2	CFSB-027-SO-10-12	CFSB-028-SO-0.5-2	CFSB-028-SO-10-12	CFSB-029-SO-0.5-2	CFSB-029-SO-10-12	CFSB-030-SO-0.5-2	CFSB-030-SO-10-12	CFSB-033-SO-0.5-2	CFSB-033-SO-10-12	CFSB-034-SO-0.5-2
1,1,1-Trichloroethane	810	3600	0.28	mg/kg		0.00042 U	0.00037 U	0.00038 U	0.00029 U	0.00031 U	0.00048 U	0.00044 U	0.00034 U	0.00032 U	0.00034 U	0.00036 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg		0.00019 U	0.00017 U	0.00017 U	0.00013 U	0.00014 U	0.00022 U	0.0002 U	0.00015 U	0.00015 U	0.00015 U	0.00016 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg		0.00048 U	0.00043 U	0.00044 U	0.00033 U	0.00036 U	0.00056 U	0.00051 U	0.00039 U	0.00038 U	0.00039 U	0.00042 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg		0.00031 U	0.00027 U	0.00028 U	0.00021 U	0.00023 U	0.00036 U	0.00033 U	0.00025 U	0.00024 U	0.00025 U	0.00027 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg		0.00037 U	0.00033 U	0.00034 U	0.00026 U	0.00028 U	0.00043 U	0.0004 U	0.0003 U	0.00029 U	0.0003 U	0.00032 U
1,1-Dichloroethene	23	100	0.01	mg/kg		0.00045 U	0.0004 U	0.00041 U	0.00031 U	0.00033 U	0.00052 U	0.00048 U	0.00037 U	0.00035 U	0.00037 U	0.00039 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg		0.00012 U	0.00011 U	0.00011 UJ	0.000083 UJ	0.00009 U	0.00014 U	0.00013 U	0.000098 U	0.000094 U	0.000099 U	0.0001 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg		0.00035 U	0.00031 U	0.00032 U	0.00024 U	0.00026 U	0.00041 U	0.00037 U	0.00029 U	0.00027 U	0.00029 U	0.0003 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg		0.00052 U	0.00046 U	0.00047 U	0.00035 U	0.00038 U	0.0006 U	0.00055 U	0.00042 U	0.0004 U	0.00042 U	0.00045 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg		0.00015 U	0.00014 U	0.00014 U	0.00011 U	0.00011 U	0.00018 U	0.00016 U	0.00012 U	0.00012 U	0.00013 U	0.00013 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg		0.00012 U	0.00011 U	0.00011 U	0.000083 U	0.00009 U	0.00014 U	0.00013 U	0.000098 U	0.000094 U	0.000099 U	0.0001 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg		0.00019 U	0.00017 U	0.00017 U	0.00013 U	0.00014 U	0.00022 U	0.0002 U	0.00015 U	0.00015 U	0.00015 U	0.00016 U
1,3-Dichlorobenzene	--	--	--	mg/kg		0.00013 U	0.00012 U	0.00012 U	0.00009 U	0.000098 U	0.00015 U	0.00014 U	0.00011 U	0.0001 U	0.00011 U	0.00011 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg		0.00014 U	0.00013 U	0.00013 U	0.000098 U	0.00011 U	0.00017 U	0.00015 U	0.00012 U	0.00011 U	0.00012 U	0.00012 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg		0.002 J	0.0016 J	0.00077 U	0.00058 U	0.00063 U	0.00098 U	0.024	0.00087 J	0.00066 U	0.00069 U	0.00073 U
2-Hexanone	20	130	0.00088	mg/kg		0.001 U	0.00092 U	0.00095 U	0.00071 U	0.00077 U	0.0012 U	0.0011 U	0.00084 U	0.0008 U	0.00084 U	0.00089 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg		0.0024 U	0.0022 U	0.0022 U	0.0017 U	0.0018 U	0.0028 U	0.0026 U	0.002 U	0.0019 U	0.002 U	0.0021 U
Acetone	6100	67000	0.29	mg/kg		0.036 J+	0.022 J+	0.018 J+	0.022 J+	0.012	0.028	0.23 J+	0.011 J+	0.02	0.0057	0.019
Benzene	1.2	5.1	0.00023	mg/kg		0.0031	0.00046 J	0.0011	0.00056 J	0.00017 J	0.00079 J	0.00043 J	0.00061 J	0.00026 J	0.00018 U	0.00019 U
Bromoform	19	86	0.00087	mg/kg		0.00014 U	0.00013 U	0.00013 UJ	0.000098 UJ	0.00011 U	0.00017 U	0.00015 U	0.00012 U	0.00011 U	0.00012 U	0.00012 U
Bromomethane	0.68	3	0.00019	mg/kg		0.00035 U	0.00031 U	0.00032 U	0.00024 U	0.00026 U	0.00041 U	0.00037 U	0.00029 U	0.00027 U	0.00029 U	0.00045 J
Carbon disulfide	77	350	0.024	mg/kg		0.005	0.0011	0.00043 U	0.0013	0.0018	0.00055 U	0.0059	0.00038 U	0.0033	0.00039 U	0.0012
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg		0.00047 U	0.00042 U	0.00043 U	0.00032 U	0.00035 U	0.00055 U	0.0005 U	0.00038 U	0.00037 U	0.00039 U	0.00041 U
Chlorobenzene	28	130	0.0053	mg/kg		0.00015 U	0.00014 U	0.00014 U	0.00011 U	0.00011 U	0.00018 U	0.00016 U	0.00012 U	0.00012 U	0.00013 U	0.00013 U
Chlorobromomethane	15	63	0.0021	mg/kg		0.00019 U	0.00017 U	0.00017 U	0.00013 U	0.00014 U	0.00022 U	0.0002 U	0.00015 U	0.00015 U	0.00015 U	0.00016 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg		0.00016 U	0.00015 U	0.00015 U	0.00011 U	0.00012 U	0.00019 U	0.00017 U	0.00013 U	0.00013 U	0.00013 U	0.00014 U
Chloroethane	1400	5700	0.59	mg/kg		0.00038 U	0.00034 U	0.00035 U	0.00026 U	0.00029 U	0.00045 U	0.00041 U	0.00031 U	0.0003 U	0.00031 U	0.00033 U
Chloroform	0.32	1.4	0.000061	mg/kg		0.00023 U	0.00021 U	0.00021 U	0.00016 U	0.00017 U	0.00027 U	0.00024 U	0.00019 U	0.00018 U	0.00019 U	0.0002 U
Chloromethane	11	46	0.0049	mg/kg		0.00042 U	0.00037 U	0.00038 U	0.00029 U	0.00031 U	0.00048 U	0.00044 U	0.00034 U	0.00032 U	0.00034 U	0.00036 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg		0.00024 U	0.00022 U	0.00022 U	0.00017 U	0.00018 U	0.00028 U	0.00026 U	0.0002 U	0.00019 U	0.0002 U	0.00021 U
cis-1,3-Dichloropropene	--	--	--	mg/kg		0.00016 U	0.00015 U	0.00015 U	0.00011 U	0.00012 U	0.00019 U	0.00017 U	0.00013 U	0.00013 U	0.00013 U	0.00014 U
Cyclohexane	650	2700	1.3	mg/kg		0.0086 J+	0.0011 J+	0.003	0.0014	0.00038 U	0.00059 U	0.00054 U	0.0015 J+	0.00039 U	0.00041 U	0.00044 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg		0.00042 U	0.00037 U	0.00038 U	0.00029 U	0.00031 U	0.00048 U	0.00044 U	0.00034 U	0.00032 U	0.00034 U	0.00036 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg		0.00035 U	0.00031 U	0.00032 UJ	0.00024 UJ	0.00026 U	0.00041 U	0.00037 U	0.00029 U	0.00027 U	0.00029 U	0.0003 U
Ethylbenzene	5.8	25	0.0017	mg/kg		0.0038	0.00047 J	0.0015	0.00045 J	0.00015 U	0.00023 U	0.00021 U	0.00078 J	0.00015 U	0.00016 U	0.00017 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg		0.00013 U	0.00012 U	0.00012 U	0.00009 U	0.000098 U	0.00015 U	0.00014 U	0.00011 U	0.0001 U	0.00011 U	0.00011 U
Isopropylbenzene	190	990	0.074	mg/kg		0.00052 J	0.00017 U	0.0002 J	0.00013 U	0.00014 U	0.00022 U	0.0002 U	0.00015 U	0.00015 U	0.00015 U	0.00016 U
Methyl acetate	7800	120000	0.41	mg/kg		0.00099 U	0.00088 U	0.00091 U	0.00068 U	0.011	0.0011 U	0.001 U	0.0008 U	0.00077 U	0.00081 U	0.00086 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg		0.00019 U	0.00017 U	0.00017 U	0.00013 U	0.00014 U	0.00022 U	0.0002 U	0.00015 U	0.00015 U	0.00015 U	0.00016 U
Methylcyclohexane	--	--	--	mg/kg		0.015 J+	0.0019 J+	0.0052	0.0018	0.00041 U	0.00064 U	0.00058 U	0.0025 J+	0.00043 J	0.00045 U	0.00048 U
Methylene Chloride	35	320	0.0027	mg/kg		0.00035 U	0.00031 U	0.00032 U	0.00024 U	0.00026 U	0.00041 U	0.00037 U	0.00029 U	0.00056 J	0.00029 U	0.0003 U
m-Xylene & p-Xylene	56	240	--	mg/kg		0.0091	0.0016	0.0028	0.0012	0.00033 J	0.00014 U	0.00013 U	0.0027	0.00021 J	0.000099 U	0.00022 J
o-Xylene	65	280	0.019	mg/kg		0.0032	0.00058 J	0.00094 J	0.00041 J	0.00013 U	0.0002 U	0.00019 U	0.00093	0.00014 U	0.00014 U	0.00015 U
Styrene	600	3500	0.13	mg/kg		0.00016 U	0.00015 U	0.00015 U	0.00011 U	0.00012 U	0.00019 U	0.00017 U	0.00013 U	0.00013 U	0.00013 U	0.00014 U
Tetrachloroethene	8.1	39	0.0018	mg/kg		0.00031 U	0.00027 U	0.00028 U	0.00021 U	0.00023 U	0.00036 U	0.00033 U	0.00025 U	0.00024 U	0.00025 U	0.00027 U
Toluene	490	4700	0.076	mg/kg		0.013	0.0022	0.0047	0.0018	0.00042 J	0.00055 J	0.00033 J	0.0036	0.0005 J	0.00017 U	0.00039 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg		0.00043 U	0.00038 U	0.00039 U	0.00029 U	0.00032 U	0.0005 U	0.00045 U	0.00035 U	0.00033 U	0.00035 U	0.00037 U
trans-1,3-Dichloropropene	--	--	--	mg/kg		0.00011 U	0.000098 U	0.0001 U	0.000075 U	0.000082 U	0.00013 U	0.00012 U	0.000089 U	0.000085 U	0.00009 U	0.000095 U
Trichloroethene	0.41	1.9	0.0001	mg/kg		0.00029 U	0.00025 U	0.00026 U	0.0002 U	0.00021 U	0.00033 U	0.0003 U	0.00023 U	0.00022 U	0.00023 U	0.00025 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg		0.00037 U	0.00033 U	0.00034 U	0.00026 U	0.00028 U	0.00043 U	0.0004 U	0.0003 U	0.00029 U	0.0003 U	0.00032 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg		0.00043 U	0.00038 U	0.00039 U	0.00029 U	0.00032 U	0.0005 U	0.00045 U	0.00035 U	0.00033 U	0.00035 U	0.00037 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-034	CFSB-035	CFSB-035	CFSB-036	CFSB-036	CFSB-037	CFSB-037	CFSB-038	CFSB-038	CFSB-040	CFSB-040
			Sample Date:	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-034-SO-10-12	CFSB-035-SO-0.5-2	CFSB-035-SO-10-12	CFSB-036-SO-0.5-2	CFSB-036-SO-10-12	CFSB-037-SO-0.5-2	CFSB-037-SO-10-12	CFSB-038-SO-0.5-2	CFSB-038-SO-10-12	CFSB-040-SO-0.5-2	CFSB-040-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.0004 U	0.00032 U	0.0003 U	0.00039 U	0.00035 U	0.00028 U	0.00029 U	0.00036 U	0.00086 U	0.001 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00018 U	0.00014 U	0.00013 U	0.00017 U	0.00016 U	0.00013 U	0.00013 U	0.00016 U	0.00038 U	0.00046 U	0.00018 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00046 U	0.00037 U	0.00035 U	0.00045 U	0.0004 U	0.00033 U	0.00034 U	0.00041 U	0.00099 U	0.0012 U	0.00046 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00029 U	0.00024 U	0.00022 U	0.00028 U	0.00026 U	0.00021 U	0.00021 U	0.00026 U	0.00063 U	0.00076 U	0.00029 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00035 U	0.00029 U	0.00027 U	0.00035 U	0.00031 U	0.00025 U	0.00026 U	0.00032 U	0.00077 U	0.00092 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00043 U	0.00035 U	0.00032 U	0.00042 U	0.00038 U	0.0003 U	0.00031 U	0.00039 U	0.00092 U	0.0011 U	0.00043 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00011 U	0.000093 U	0.000087 U	0.00011 U	0.0001 U	0.000082 U	0.000084 U	0.0001 U	0.00025 U	0.0003 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00033 U	0.00027 U	0.00025 U	0.00032 U	0.00029 U	0.00024 U	0.00024 U	0.0003 U	0.00072 U	0.00087 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00049 U	0.0004 U	0.00037 U	0.00048 U	0.00043 U	0.00035 U	0.00036 U	0.00044 U	0.0011 U	0.0013 U	0.00049 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00015 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U	0.0001 U	0.00011 U	0.00013 U	0.00032 U	0.00038 U	0.00015 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00011 U	0.000093 U	0.000087 U	0.00011 U	0.0001 U	0.000082 U	0.000084 U	0.0001 U	0.00025 U	0.0003 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00018 U	0.00014 U	0.00013 U	0.00017 U	0.00016 U	0.00013 U	0.00013 U	0.00016 U	0.00038 U	0.00046 U	0.00018 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00013 U	0.0001 U	0.000095 U	0.00012 U	0.00011 U	0.000089 U	0.000091 U	0.00011 U	0.00027 U	0.00032 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00014 U	0.00011 U	0.0001 U	0.00013 U	0.00012 U	0.000097 U	0.000099 U	0.00012 U	0.00029 U	0.00035 U	0.00014 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0008 U	0.00065 U	0.00061 UJ	0.00078 U	0.00071 U	0.00057 U	0.00059 U	0.00072 U	0.0017 U	0.0021 U	0.0008 U
2-Hexanone	20	130	0.00088	mg/kg	0.00098 U	0.00079 U	0.00075 UJ	0.00095 U	0.00086 U	0.0007 U	0.00072 U	0.00088 U	0.0021 U	0.0025 U	0.00098 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0023 U	0.0019 U	0.0018 UJ	0.0023 U	0.002 U	0.0017 U	0.0017 U	0.0021 U	0.005 U	0.006 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.0097	0.014	0.0059 J	0.0011 U	0.00097 U	0.0079	0.014	0.036	0.041	0.046	0.011
Benzene	1.2	5.1	0.00023	mg/kg	0.00021 U	0.00017 U	0.00032 J	0.00026 J	0.00018 U	0.00015 U	0.00015 U	0.00039 J	0.00082 J	0.0011 J	0.00035 J
Bromoform	19	86	0.00087	mg/kg	0.00014 U	0.00011 U	0.0001 U	0.00013 U	0.00012 U	0.000097 U	0.000099 U	0.00012 U	0.00029 U	0.00035 U	0.00014 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00033 U	0.00027 U	0.00025 U	0.00032 U	0.00029 U	0.00024 U	0.00024 U	0.0003 U	0.00072 U	0.00087 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.00061 J	0.0017	0.00034 U	0.00044 U	0.0004 U	0.00039 J	0.00068 J	0.0011	0.0012 J	0.0015 J	0.00045 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00045 U	0.00036 U	0.00034 U	0.00044 U	0.0004 U	0.00032 U	0.00033 U	0.0004 U	0.00097 U	0.0012 U	0.00045 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00015 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U	0.0001 U	0.00011 U	0.00013 U	0.00032 U	0.00038 U	0.00015 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00018 U	0.00014 U	0.00013 U	0.00017 U	0.00016 U	0.00013 U	0.00013 U	0.00016 U	0.00038 U	0.00046 U	0.00018 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00016 U	0.00013 U	0.00012 U	0.00015 U	0.00014 U	0.00011 U	0.00011 U	0.00014 U	0.00034 U	0.00041 U	0.00016 U
Chloroethane	1400	5700	0.59	mg/kg	0.00036 U	0.0003 U	0.00028 U	0.00036 U	0.00032 U	0.00026 U	0.00027 U	0.00033 U	0.00079 U	0.00095 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00022 U	0.00018 U	0.00017 U	0.00021 U	0.00019 U	0.00016 U	0.00016 U	0.0002 U	0.00047 U	0.00057 U	0.00022 U
Chloromethane	11	46	0.0049	mg/kg	0.0004 U	0.00032 U	0.0003 U	0.00039 U	0.00035 U	0.00028 U	0.00029 U	0.00036 U	0.00086 U	0.001 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00023 U	0.00019 U	0.00017 U	0.00022 U	0.0002 U	0.00016 U	0.00017 U	0.00021 U	0.0005 U	0.0006 U	0.00023 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00016 U	0.00013 U	0.00012 U	0.00015 U	0.00014 U	0.00011 U	0.00011 U	0.00014 U	0.00034 U	0.00041 U	0.00016 U
Cyclohexane	650	2700	1.3	mg/kg	0.00048 U	0.00039 U	0.00036 U	0.00047 U	0.00042 U	0.00034 U	0.00035 U	0.00058 J	0.001 U	0.0015 J	0.00089 J
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.0004 U	0.00032 U	0.0003 U	0.00039 U	0.00035 U	0.00028 U	0.00029 U	0.00036 U	0.00086 U	0.001 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00033 U	0.00027 U	0.00025 U	0.00032 U	0.00029 U	0.00024 U	0.00024 U	0.0003 U	0.00072 U	0.00087 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00019 U	0.00015 U	0.00014 U	0.00018 U	0.00017 U	0.00013 U	0.00014 U	0.00017 U	0.00041 U	0.00094 J	0.00045 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00013 U	0.0001 U	0.000095 U	0.00012 U	0.00011 U	0.000089 U	0.000091 U	0.00011 U	0.00027 U	0.00032 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00018 U	0.00014 U	0.00013 U	0.00017 U	0.00016 U	0.00013 U	0.00013 U	0.00016 U	0.00038 U	0.00046 U	0.00018 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00094 U	0.00076 U	0.00071 U	0.00091 U	0.00083 U	0.00067 U	0.00069 U	0.00085 U	0.0089 J	0.0024 U	0.00094 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00018 U	0.00014 U	0.00013 U	0.00017 U	0.00016 U	0.00013 U	0.00013 U	0.00016 U	0.00038 U	0.00046 U	0.00018 U
Methylcyclohexane	--	--	--	mg/kg	0.00052 U	0.00042 U	0.0004 U	0.00086 J	0.00046 U	0.00037 U	0.00038 U	0.0011	0.0011 U	0.0024 J	0.0018
Methylene Chloride	35	320	0.0027	mg/kg	0.00033 U	0.00027 U	0.00025 U	0.00032 U	0.00029 U	0.00024 U	0.00024 U	0.0003 U	0.00072 U	0.00087 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00021 J	0.00016 J	0.000087 U	0.00065 J	0.0001 U	0.000082 U	0.000084 U	0.00019 J	0.00035 J	0.0024 J	0.0013
o-Xylene	65	280	0.019	mg/kg	0.00017 U	0.00014 U	0.00013 U	0.00022 J	0.00015 U	0.00012 U	0.00012 U	0.00015 U	0.00036 U	0.0011 J	0.00046 J
Styrene	600	3500	0.13	mg/kg	0.00016 U	0.00013 U	0.00012 U	0.00015 U	0.00014 U	0.00011 U	0.00011 U	0.00014 U	0.00034 U	0.00041 U	0.00016 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00029 U	0.00024 U	0.00022 U	0.00028 U	0.00026 U	0.00021 U	0.00021 U	0.00026 U	0.00063 U	0.00076 U	0.00029 U
Toluene	490	4700	0.076	mg/kg	0.00033 J	0.00025 J	0.00015 U	0.00093 J	0.00017 U	0.0002 J	0.00019 J	0.00048 J	0.001 J	0.0037	0.0018
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00041 U	0.00033 U	0.00031 U	0.0004 U	0.00036 U	0.00029 U	0.0003 U	0.00037 U	0.00088 U	0.0011 U	0.00041 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.0001 U	0.000085 U	0.000079 U	0.0001 U	0.000092 U	0.000074 U	0.000076 U	0.000094 U	0.00023 U	0.00027 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00027 U	0.00022 U	0.00021 U	0.00026 U	0.00024 U	0.00019 U	0.0002 U	0.00024 U	0.00059 U	0.0007 U	0.00027 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00035 U	0.00029 U	0.00027 U	0.00035 U	0.00031 U	0.00025 U	0.00026 U	0.00032 U	0.00077 U	0.00092 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00041 U	0.00033 U	0.00031 U	0.0004 U	0.00036 U	0.00029 U	0.0003 U	0.00037 U	0.00088 U	0.0011 U	0.00041 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-042	CFSB-042	CFSB-044	CFSB-044	CFSB-045	CFSB-045	CFSB-046	CFSB-046	CFSB-048	CFSB-048	CFSB-049
				Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/28/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
				Sample Designation:	CFSB-042-SO-0.5-2	CFSB-042-SO-10-12	CFSB-044-SO-0.5-2.0	CFSB-044-SO-10-12	CFSB-045-SO-0.5-2	CFSB-045-SO-10-12	CFSB-046-SO-0.5-2.0	CFSB-046-SO-10-12	CFSB-048-SO-0.5-2.0	CFSB-048-SO-10-12	CFSB-049-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00038 U	0.0004 U	0.00036 U	0.00046 U	0.00035 U	0.00071 U	0.00035 U	0.00042 U	0.00036 U	0.00037 U	0.00032 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00017 U	0.00018 U	0.00016 U	0.00021 U	0.00016 U	0.00032 U	0.00016 U	0.00019 U	0.00016 U	0.00016 U	0.00014 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00045 U	0.00046 U	0.00042 U	0.00054 U	0.00041 U	0.00082 U	0.0004 U	0.00049 U	0.00042 U	0.00042 U	0.00037 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00028 U	0.00029 U	0.00027 U	0.00034 U	0.00026 U	0.00052 U	0.00026 U	0.00031 U	0.00027 U	0.00027 U	0.00024 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00034 U	0.00035 U	0.00032 U	0.00041 U	0.00032 U	0.00064 U	0.00031 U	0.00038 U	0.00032 U	0.00033 U	0.00029 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00042 U	0.00043 U	0.00039 U	0.0005 U	0.00038 U	0.00077 U	0.00038 U	0.00045 U	0.00039 U	0.0004 U	0.00034 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00011 U	0.00011 U	0.0001 U	0.00013 U	0.0001 U	0.00021 U	0.0001 U	0.00012 U	0.0001 U	0.00011 U	0.000092 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00032 U	0.00033 U	0.00031 U	0.00039 U	0.0003 U	0.0006 U	0.00029 U	0.00035 U	0.0003 U	0.00031 U	0.00027 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00048 U	0.00049 U	0.00045 U	0.00057 U	0.00044 U	0.00088 U	0.00043 U	0.00052 U	0.00045 U	0.00045 U	0.0004 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00014 U	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.00026 U	0.00013 U	0.00016 U	0.00013 U	0.00013 U	0.00012 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00011 U	0.00011 U	0.0001 U	0.00013 U	0.0001 U	0.00021 U	0.0001 U	0.00012 U	0.0001 U	0.00011 U	0.000092 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00017 U	0.00018 U	0.00016 U	0.00021 U	0.00016 U	0.00032 U	0.00016 U	0.00019 U	0.00016 U	0.00016 U	0.00014 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00012 U	0.00012 U	0.00011 U	0.00015 U	0.00011 U	0.00022 U	0.00011 U	0.00013 U	0.00011 U	0.00012 U	0.0001 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00013 U	0.00014 U	0.00012 U	0.00016 U	0.00012 U	0.00024 U	0.00012 U	0.00014 U	0.00012 U	0.00013 U	0.00011 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0017 J	0.0008 U	0.00073 U	0.00094 U	0.0017 J	0.0034 J	0.0007 U	0.00085 U	0.00073 U	0.00074 U	0.0032 J
2-Hexanone	20	130	0.00088	mg/kg	0.00095 U	0.00098 U	0.0009 U	0.0011 U	0.00088 U	0.0018 U	0.00086 U	0.001 U	0.00089 U	0.00091 U	0.00079 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0022 U	0.0023 U	0.0021 U	0.0027 U	0.0021 U	0.0042 U	0.002 U	0.0025 U	0.0021 U	0.0021 U	0.0019 U
Acetone	6100	67000	0.29	mg/kg	0.046	0.0082	0.06	0.0053 J	0.029	0.03	0.007	0.0061	0.023	0.0067	0.019
Benzene	1.2	5.1	0.00023	mg/kg	0.00024 J	0.00021 U	0.00082 J	0.00056 J	0.00038 J	0.00048 J	0.00018 U	0.00024 J	0.00055 J	0.00044 J	0.00081 J
Bromoform	19	86	0.00087	mg/kg	0.00013 U	0.00014 U	0.00012 U	0.00016 U	0.00012 U	0.00024 U	0.00012 U	0.00014 U	0.00012 U	0.00013 U	0.00011 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00032 U	0.00033 U	0.00031 U	0.00039 U	0.0003 UJ	0.0006 UJ	0.00029 U	0.00035 U	0.0003 U	0.00031 U	0.00027 U
Carbon disulfide	77	350	0.024	mg/kg	0.00068 J	0.00045 U	0.00041 U	0.00052 U	0.0014	0.0024	0.00039 U	0.00056 J	0.001	0.00041 U	0.00054 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00044 U	0.00045 U	0.00041 U	0.00052 U	0.0004 U	0.0008 U	0.00039 U	0.00048 U	0.00041 U	0.00041 U	0.00036 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00014 U	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.00026 U	0.00013 U	0.00016 U	0.00013 U	0.00013 U	0.00012 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00017 U	0.00018 U	0.00016 U	0.00021 U	0.00016 U	0.00032 U	0.00016 U	0.00019 U	0.00016 U	0.00016 U	0.00014 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00015 U	0.00016 U	0.00014 U	0.00018 U	0.00014 U	0.00028 U	0.00014 U	0.00017 U	0.00014 U	0.00014 U	0.00013 U
Chloroethane	1400	5700	0.59	mg/kg	0.00035 U	0.00036 U	0.00033 U	0.00043 U	0.00033 U	0.00066 U	0.00032 U	0.00039 U	0.00033 U	0.00034 U	0.00029 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00021 U	0.00022 U	0.0002 U	0.00026 U	0.0002 U	0.00039 U	0.00019 U	0.00023 U	0.0002 U	0.0002 U	0.00018 U
Chloromethane	11	46	0.0049	mg/kg	0.00038 U	0.0004 U	0.00036 U	0.00046 U	0.00035 UJ	0.00071 UJ	0.00035 U	0.00042 U	0.00036 U	0.00037 U	0.00032 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00022 U	0.00023 U	0.00021 U	0.00027 U	0.00021 U	0.00041 U	0.0002 U	0.00024 U	0.00021 U	0.00021 U	0.00018 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00015 U	0.00016 U	0.00014 U	0.00018 U	0.00014 U	0.00028 U	0.00014 U	0.00017 U	0.00014 U	0.00014 U	0.00013 U
Cyclohexane	650	2700	1.3	mg/kg	0.00047 U	0.00072 J	0.00044 U	0.0018	0.00043 U	0.00086 U	0.00042 U	0.00051 U	0.00044 U	0.00087 J	0.00063 J+
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00038 U	0.0004 U	0.00036 U	0.00046 U	0.00035 U	0.00071 U	0.00035 U	0.00042 U	0.00036 U	0.00037 U	0.00032 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00032 U	0.00033 U	0.00031 U	0.00039 U	0.0003 U	0.0006 U	0.00029 U	0.00035 U	0.0003 U	0.00031 U	0.00027 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00018 U	0.00038 J	0.00017 U	0.00068 J	0.00017 U	0.00038 J	0.00016 U	0.0002 U	0.00017 U	0.00048 J	0.0004 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00012 U	0.00012 U	0.00011 U	0.00015 U	0.00011 U	0.00022 U	0.00011 U	0.00013 U	0.00011 U	0.00012 U	0.0001 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00017 U	0.00018 U	0.00016 U	0.00021 U	0.00016 U	0.00032 U	0.00016 U	0.00019 U	0.00016 U	0.00016 U	0.00014 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00091 U	0.00094 U	0.0022 J	0.0011 U	0.00084 U	0.0017 U	0.00082 U	0.001 U	0.014	0.00087 U	0.00076 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00017 U	0.00018 U	0.00016 U	0.00021 U	0.00016 U	0.00032 U	0.00016 U	0.00019 U	0.00016 U	0.00016 U	0.00014 U
Methylcyclohexane	--	--	--	mg/kg	0.00051 U	0.0013	0.00048 U	0.0034	0.00057 J	0.0013 J	0.00046 U	0.001 J	0.00047 U	0.0016	0.00064 J
Methylene Chloride	35	320	0.0027	mg/kg	0.00032 U	0.00033 U	0.00031 U	0.00039 U	0.0003 U	0.00082 J	0.00029 U	0.00035 U	0.0003 U	0.00031 U	0.00027 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00023 J	0.0011	0.0001 U	0.0021	0.00039 J	0.0011 J	0.0001 U	0.00057 J	0.0001 U	0.0015	0.0012
o-Xylene	65	280	0.019	mg/kg	0.00016 U	0.00037 J	0.00015 U	0.00068 J	0.00016 J	0.00046 J	0.00015 U	0.00021 J	0.00015 U	0.00049 J	0.00058 J
Styrene	600	3500	0.13	mg/kg	0.00015 U	0.00016 U	0.00014 U	0.00018 U	0.00014 U	0.00028 U	0.00014 U	0.00017 U	0.00014 U	0.00014 U	0.00013 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00028 U	0.00029 U	0.00027 U	0.00034 U	0.00026 U	0.00052 U	0.00026 U	0.00031 U	0.00027 U	0.00027 U	0.00024 U
Toluene	490	4700	0.076	mg/kg	0.00066 J	0.0017	0.00068 J	0.0028	0.00068 J	0.0018 J	0.00017 U	0.00096 J	0.00053 J	0.0022	0.002
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.0004 U	0.00041 U	0.00037 U	0.00047 U	0.00036 U	0.00073 U	0.00036 U	0.00043 U	0.00037 U	0.00038 U	0.00033 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.0001 U	0.0001 U	0.000095 U	0.00012 U	0.000093 U	0.00019 U	0.000091 U	0.00011 U	0.000095 U	0.000096 U	0.000084 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00026 U	0.00027 U	0.00025 U	0.00032 U	0.00024 U	0.00049 U	0.00024 U	0.00029 U	0.00025 U	0.00025 U	0.00022 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00034 U	0.00035 U	0.00032 U	0.00041 U	0.00032 U	0.00064 U	0.00031 U	0.00038 U	0.00032 U	0.00033 U	0.00029 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.0004 U	0.00041 U	0.00037 U	0.00047 U	0.00036 U	0.00073 U	0.00036 U	0.00043 U	0.00037 U	0.00038 U	0.00033 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-049	CFSB-050	CFSB-050	CFSB-051	CFSB-051	CFSB-052	CFSB-052	CFSB-053	CFSB-053	CFSB-054	CFSB-054
			Sample Date:	5/28/2016	5/21/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/31/2016	5/31/2016	5/28/2016	5/28/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-049-SO-10-12	CFSB-050-SO-0.5-2	CFSB-050-SO-10-12	CFSB-051-SO-0.5-2	CFSB-051-SO-10-12	CFSB-052-SO-0.5-2	CFSB-052-SO-10-12	CFSB-053-SO-0.5-2	CFSB-053-SO-10-12	CFSB-054-SO-0.5-2	CFSB-054-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00031 U	0.00077 U	0.00067 U	0.00042 U	0.00037 U	0.00041 U	0.00034 U	0.00034 U	0.0003 U	0.00035 U	0.00038 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00014 U	0.00035 U	0.0003 U	0.00019 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00013 U	0.00016 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00035 U	0.00089 U	0.00078 U	0.00049 U	0.00043 U	0.00048 U	0.00039 U	0.00039 U	0.00035 U	0.00041 U	0.00044 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00023 U	0.00057 U	0.00049 U	0.00031 U	0.00027 U	0.00031 U	0.00025 U	0.00025 U	0.00022 U	0.00026 U	0.00028 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00027 U	0.00069 U	0.0006 U	0.00038 U	0.00033 U	0.00037 U	0.0003 U	0.0003 U	0.00027 U	0.00031 U	0.00034 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00033 U	0.00083 U	0.00072 U	0.00045 U	0.0004 U	0.00045 U	0.00036 U	0.00036 U	0.00032 U	0.00038 U	0.00041 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000089 U	0.00022 U	0.00019 U	0.00012 U	0.00011 U	0.00012 U	0.000098 U	0.000098 U	0.000086 U	0.0001 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00026 U	0.00065 U	0.00057 U	0.00035 U	0.00031 U	0.00035 U	0.00028 U	0.00028 U	0.00025 U	0.0003 U	0.00032 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00038 U	0.00095 U	0.00083 U	0.00052 U	0.00046 U	0.00051 U	0.00042 U	0.00042 U	0.00037 U	0.00044 U	0.00047 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00011 U	0.00028 U	0.00025 U	0.00015 U	0.00014 U	0.00015 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000089 U	0.00022 U	0.00019 U	0.00012 U	0.00011 U	0.00012 U	0.000098 U	0.000098 U	0.000086 U	0.0001 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00014 U	0.00035 U	0.0003 U	0.00019 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00013 U	0.00016 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.000097 U	0.00024 U	0.00021 U	0.00013 U	0.00012 U	0.00013 U	0.00011 U	0.00011 U	0.000094 U	0.00011 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.0001 U	0.00026 U	0.00023 U	0.00014 U	0.00013 U	0.00014 U	0.00012 U	0.00012 U	0.0001 U	0.00012 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0023 J	0.0016 U	0.0014 U	0.00085 U	0.00075 U	0.00084 U	0.00068 U	0.00069 U	0.0006 U	0.0043 J	0.0033 J
2-Hexanone	20	130	0.00088	mg/kg	0.00076 U	0.0019 U	0.0017 U	0.001 U	0.00092 U	0.001 U	0.00083 U	0.00084 U	0.00074 U	0.00087 U	0.00094 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0018 U	0.0045 U	0.0039 U	0.0025 U	0.0022 U	0.0024 U	0.002 U	0.002 U	0.0017 U	0.0021 U	0.0022 U
Acetone	6100	67000	0.29	mg/kg	0.024	0.078	0.017	0.025	0.016	0.032	0.0093	0.012	0.0077	0.042	0.041
Benzene	1.2	5.1	0.00023	mg/kg	0.00016 U	0.00066 J	0.00036 J	0.00028 J	0.00028 J	0.00022 U	0.00042 J	0.00045 J	0.00022 J	0.00052 J	0.0006 J
Bromoform	19	86	0.00087	mg/kg	0.0001 U	0.00026 U	0.00023 U	0.00014 U	0.00013 U	0.00014 U	0.00012 U	0.00012 U	0.0001 U	0.00012 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00026 U	0.00065 U	0.00057 UJ	0.00035 U	0.00031 U	0.00035 UJ	0.00028 U	0.00028 U	0.00025 U	0.0003 U	0.00032 U
Carbon disulfide	77	350	0.024	mg/kg	0.00039 J	0.0014 J	0.00076 U	0.0028	0.003	0.0011	0.00042 J	0.0024	0.0012	0.0024	0.0014
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00035 U	0.00087 U	0.00076 U	0.00048 U	0.00042 U	0.00047 U	0.00038 U	0.00038 U	0.00034 U	0.0004 U	0.00043 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00011 U	0.00028 U	0.00025 U	0.00015 U	0.00014 U	0.00015 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00014 U	0.00035 U	0.0003 U	0.00019 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00013 U	0.00016 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00012 U	0.0003 U	0.00027 U	0.00017 U	0.00015 U	0.00016 U	0.00013 U	0.00013 U	0.00012 U	0.00014 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00028 U	0.00071 U	0.00062 U	0.00039 U	0.00034 U	0.00038 U	0.00031 U	0.00031 U	0.00027 U	0.00032 U	0.00035 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00017 U	0.00043 U	0.00037 U	0.00023 U	0.00021 U	0.00023 U	0.00019 U	0.00019 U	0.00016 U	0.00019 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.00031 U	0.00077 U	0.00067 UJ	0.00042 U	0.00037 U	0.00041 UJ	0.00034 U	0.00034 U	0.0003 U	0.00035 U	0.00038 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00018 U	0.00045 U	0.00039 U	0.00024 U	0.00022 U	0.00024 U	0.0002 U	0.0002 U	0.00017 U	0.0002 U	0.00022 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00012 U	0.0003 U	0.00027 U	0.00017 U	0.00015 U	0.00016 U	0.00013 U	0.00013 U	0.00012 U	0.00014 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00037 U	0.00093 U	0.0011 J	0.00051 U	0.00045 U	0.0005 U	0.00097	0.0013	0.00036 U	0.00065 J+	0.0014 J+
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00031 U	0.00077 U	0.00067 U	0.00042 U	0.00037 U	0.00041 U	0.00034 U	0.00034 U	0.0003 U	0.00035 U	0.00038 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00026 U	0.00065 U	0.00057 U	0.00035 U	0.00031 U	0.00035 U	0.00028 U	0.00028 U	0.00025 U	0.0003 U	0.00032 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00015 U	0.00048 J	0.00051 J	0.0002 U	0.00018 U	0.0002 U	0.00037 J	0.00034 J	0.00018 J	0.00025 J	0.00054 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.000097 U	0.00024 U	0.00021 U	0.00013 U	0.00012 U	0.00013 U	0.00011 U	0.00011 U	0.000094 U	0.00011 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00014 U	0.00035 U	0.0003 U	0.00019 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00013 U	0.00016 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00073 U	0.32	0.0016 U	0.001 U	0.00088 U	0.0043 J	0.0008 U	0.0008 U	0.00071 U	0.00083 U	0.0009 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00014 U	0.00035 U	0.0003 U	0.00019 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00013 U	0.00016 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.0004 U	0.001 U	0.0017 J	0.00062 J	0.00066 J	0.00055 U	0.0018	0.0022	0.00076 J	0.00084 J	0.0023
Methylene Chloride	35	320	0.0027	mg/kg	0.00026 U	0.0027	0.0024	0.00035 U	0.00031 U	0.00068 J	0.00028 U	0.00028 U	0.00025 U	0.0003 U	0.00032 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00019 J	0.0012 J	0.0017 J	0.00034 J	0.0006 J	0.00026 J	0.0013	0.00087 J	0.00049 J	0.00064 J	0.0018
o-Xylene	65	280	0.019	mg/kg	0.00013 U	0.0005 J	0.00053 J	0.00018 U	0.00022 J	0.00017 U	0.0004 J	0.00032 J	0.00017 J	0.00022 J	0.00063 J
Styrene	600	3500	0.13	mg/kg	0.00012 U	0.0003 U	0.00027 U	0.00017 U	0.00015 U	0.00016 U	0.00013 U	0.00013 U	0.00012 U	0.00014 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00023 U	0.00057 U	0.00049 U	0.00031 U	0.00027 U	0.00031 U	0.00025 U	0.00025 U	0.00022 U	0.00026 U	0.00028 U
Toluene	490	4700	0.076	mg/kg	0.00024 J	0.0017 J	0.0022	0.00068 J	0.00073 J	0.00026 J	0.0021	0.0017	0.00082	0.00092 J	0.0026
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00031 U	0.00079 U	0.00069 U	0.00043 U	0.00038 U	0.00043 U	0.00035 U	0.00035 U	0.00031 U	0.00036 U	0.00039 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00008.1 U	0.0002 U	0.00018 U	0.00011 U	0.000098 U	0.00011 U	0.000089 U	0.000089 U	0.000078 U	0.000093 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00021 U	0.00053 U	0.00046 U	0.00029 U	0.00025 U	0.00028 U	0.00023 U	0.00023 U	0.0002 U	0.00024 U	0.00026 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00027 U	0.00069 U	0.0006 U	0.00038 U	0.00033 U	0.00037 U	0.0003 U	0.0003 U	0.00027 U	0.00031 U	0.00034 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00031 U	0.00079 U	0.00069 U	0.00043 U	0.00038 U	0.00043 U	0.00035 U	0.00035 U	0.00031 U	0.00036 U	0.00039 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-055	CFSB-055	CFSB-057	CFSB-057	CFSB-059	CFSB-059	CFSB-060	CFSB-060	CFSB-062	CFSB-062	CFSB-064
			Sample Date:	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/27/2016	5/27/2016	6/2/2016	6/2/2016	6/3/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFSB-055-SO-0.5-2	CFSB-055-SO-10-12	CFSB-057-SO-0.5-2	CFSB-057-SO-10-12	CFSB-059-SO-0.5-2	CFSB-059-SO-10-12	CFSB-060-SO-0.5-2	CFSB-060-SO-10-12	CFSB-062-SO-0.5-2	CFSB-062-SO-10-12	CFSB-064-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00031 U	0.00041 U	0.00035 U	0.00034 U	0.00033 U	0.00028 U	0.00034 U	0.00035 U	0.00031 U	0.00032 U	0.00038 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00014 U	0.00018 U	0.00015 U	0.00015 U	0.00015 U	0.00013 U	0.00015 U	0.00016 U	0.00014 U	0.00014 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00036 U	0.00047 U	0.0004 U	0.00039 U	0.00038 U	0.00033 U	0.0004 U	0.00041 U	0.00036 U	0.00037 U	0.00044 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00023 U	0.0003 U	0.00025 U	0.00025 U	0.00024 U	0.00021 U	0.00025 U	0.00026 U	0.00023 U	0.00024 U	0.00028 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00028 U	0.00036 U	0.00031 U	0.0003 U	0.00029 U	0.00025 U	0.00031 U	0.00031 U	0.00028 U	0.00029 U	0.00034 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00034 U	0.00044 U	0.00037 U	0.00036 U	0.00035 U	0.0003 U	0.00037 U	0.00038 U	0.00033 U	0.00035 U	0.00041 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00009 U	0.00012 U	0.0001 U	0.000097 U	0.000094 U	0.000082 U	0.000099 U	0.0001 U	0.000089 U	0.000093 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00026 U	0.00034 U	0.00029 U	0.00028 U	0.00027 U	0.00024 U	0.00029 U	0.0003 U	0.00026 U	0.00027 U	0.00032 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00038 U	0.0005 U	0.00043 U	0.00042 U	0.0004 U	0.00035 U	0.00042 U	0.00043 U	0.00038 U	0.0004 U	0.00047 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00011 U	0.00015 U	0.00013 U	0.00012 U	0.00012 U	0.0001 U	0.00013 U	0.00013 U	0.00011 U	0.00012 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00009 U	0.00012 U	0.0001 U	0.000097 U	0.000094 U	0.000082 U	0.000099 U	0.0001 U	0.000089 U	0.000093 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00014 U	0.00018 U	0.00015 U	0.00015 U	0.00015 U	0.00013 U	0.00015 U	0.00016 U	0.00014 U	0.00014 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.000098 U	0.00013 U	0.00011 U	0.00011 U	0.0001 U	0.000089 U	0.00011 U	0.00011 U	0.000097 U	0.0001 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U	0.000096 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0034 J	0.0031 J	0.0007 U	0.0025 J	0.0015 J	0.0013 J	0.00069 U	0.00071 U	0.0057	0.00065 U	0.00077 U
2-Hexanone	20	130	0.00088	mg/kg	0.00077 U	0.001 U	0.00085 U	0.00083 U	0.00081 U	0.0007 U	0.00085 U	0.00087 U	0.00076 U	0.0008 U	0.00094 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0018 U	0.0024 U	0.002 U	0.002 U	0.0019 U	0.0016 U	0.002 U	0.0021 U	0.0018 U	0.0019 U	0.0022 U
Acetone	6100	67000	0.29	mg/kg	0.037	0.037	0.031	0.023	0.027	0.012	0.01	0.0047	0.092	0.0061	0.012
Benzene	1.2	5.1	0.00023	mg/kg	0.00036 J	0.00037 J	0.00024 J	0.00041 J	0.00017 U	0.00042 J	0.00033 J	0.00018 U	0.00039 J	0.00053 J	0.0002 J
Bromoform	19	86	0.00087	mg/kg	0.00011 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U	0.000096 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.0011	0.00063 J	0.00029 U	0.00028 U	0.00027 U	0.00024 U	0.00029 U	0.0003 U	0.00026 U	0.00027 U	0.00032 U
Carbon disulfide	77	350	0.024	mg/kg	0.0011	0.0014	0.00047 J	0.00055 J	0.0025	0.00032 U	0.00058 J	0.0004 U	0.00035 U	0.00056 J	0.00043 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00035 U	0.00046 U	0.00039 U	0.00038 U	0.00037 U	0.00032 U	0.00039 U	0.0004 U	0.00035 U	0.00036 U	0.00043 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00011 U	0.00015 U	0.00013 U	0.00012 U	0.00012 U	0.0001 U	0.00013 U	0.00013 U	0.00011 U	0.00012 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00014 U	0.00018 U	0.00015 U	0.00015 U	0.00013 U	0.00013 U	0.00015 U	0.00016 U	0.00014 U	0.00014 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00012 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00011 U	0.00014 U	0.00014 U	0.00012 U	0.00013 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00029 U	0.00038 U	0.00032 U	0.00031 U	0.0003 U	0.00026 U	0.00032 U	0.00032 U	0.00028 U	0.0003 U	0.00035 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00017 U	0.00023 U	0.00019 U	0.00019 U	0.00018 U	0.00016 U	0.00019 U	0.00019 U	0.00017 U	0.00018 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.00031 U	0.00041 U	0.00035 U	0.00034 U	0.00033 U	0.00028 U	0.00034 U	0.00035 U	0.00031 U	0.00032 U	0.00038 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00018 U	0.00024 U	0.0002 U	0.00019 U	0.00019 U	0.00016 U	0.0002 U	0.0002 U	0.00018 U	0.00019 U	0.00022 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00012 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00011 U	0.00014 U	0.00014 U	0.00012 U	0.00013 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00061 J+	0.00049 J+	0.00042 U	0.00076 J+	0.00039 U	0.0011 J+	0.00041 U	0.00043 U	0.00037 U	0.0016	0.00046 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00031 U	0.00041 U	0.00035 U	0.00034 U	0.00033 U	0.00028 U	0.00034 U	0.00035 U	0.00031 U	0.00032 U	0.00038 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00026 U	0.00034 U	0.00029 U	0.00028 U	0.00027 U	0.00024 U	0.00029 U	0.0003 U	0.00026 U	0.00027 U	0.00032 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00025 J	0.00019 U	0.00016 U	0.0003 J	0.00015 U	0.00043 J	0.00016 U	0.00017 U	0.00015 U	0.00053 J	0.00018 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.000098 U	0.00013 U	0.00011 U	0.00011 U	0.0001 U	0.000089 U	0.00011 U	0.00011 U	0.000097 U	0.0001 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00014 U	0.00018 U	0.00015 U	0.00015 U	0.00015 U	0.00013 U	0.00015 U	0.00016 U	0.00014 U	0.00014 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00074 U	0.00096 U	0.00082 U	0.0008 U	0.00077 U	0.00067 U	0.00081 U	0.00083 U	0.0035 J	0.00076 U	0.0009 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00014 U	0.00018 U	0.00015 U	0.00015 U	0.00015 U	0.00013 U	0.00015 U	0.00016 U	0.00014 U	0.00014 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.0009	0.00061 J	0.00045 U	0.0012	0.00043 U	0.0019	0.00057 J	0.00046 U	0.00045 J	0.0027	0.0005 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00026 U	0.00034 U	0.00029 U	0.00028 U	0.00027 U	0.00024 U	0.00029 U	0.0003 U	0.00026 U	0.00027 U	0.00032 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.0008 J	0.00055 J	0.0001 U	0.00099	0.000094 U	0.0014	0.00036 J	0.00016 J	0.00012 J	0.0018	0.00011 U
o-Xylene	65	280	0.019	mg/kg	0.0003 J	0.0003 J	0.00015 U	0.00032 J	0.00014 U	0.00047 J	0.00014 U	0.00015 U	0.00013 U	0.00059 J	0.00016 U
Styrene	600	3500	0.13	mg/kg	0.00012 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00011 U	0.00014 U	0.00014 U	0.00012 U	0.00013 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00023 U	0.0003 U	0.00025 U	0.00025 U	0.00024 U	0.00021 U	0.00025 U	0.00026 U	0.00023 U	0.00024 U	0.00028 U
Toluene	490	4700	0.076	mg/kg	0.0011	0.00076 J	0.00027 J	0.0015	0.00016 J	0.002	0.001	0.00031 J	0.00041 J	0.0026	0.00019 U
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00032 U	0.00042 U	0.00035 U	0.00034 U	0.00033 U	0.00029 U	0.00035 U	0.00036 U	0.00032 U	0.00033 U	0.00039 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000082 U	0.00011 U	0.000091 U	0.000088 U	0.000086 U	0.000074 U	0.00009 U	0.000092 U	0.00008.1 U	0.000085 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00021 U	0.00028 U	0.00024 U	0.00023 U	0.00022 U	0.00019 U	0.00023 U	0.00024 U	0.00021 U	0.00022 U	0.00026 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00028 U	0.00036 U	0.00031 U	0.0003 U	0.00029 U	0.00025 U	0.00031 U	0.00031 U	0.00028 U	0.00029 U	0.00034 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00032 U	0.00042 U	0.00035 U	0.00034 U	0.00033 U	0.00029 U	0.00035 U	0.00036 U	0.00032 U	0.00033 U	0.00039 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-064	CFSB-065	CFSB-065	CFSB-066	CFSB-066	CFSB-068	CFSB-068	CFSB-069	CFSB-069	CFSB-071	CFSB-071
			Sample Date:	6/3/2016	6/2/2016	6/2/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-064-SO-10-12	CFSB-065-SO-0.5-2	CFSB-065-SO-10-12	CFSB-066-SO-0.5-2	CFSB-066-SO-10-12	CFSB-068-SO-0.5-2	CFSB-068-SO-10-12	CFSB-069-SO-0.5-2	CFSB-069-SO-10-12	CFSB-071-SO-0.5-2	CFSB-071-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00037 U	0.00033 U	0.00029 U	0.00035 U	0.00031 U	0.00038 U	0.00032 U	0.00037 U	0.00032 U	0.00035 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00017 U	0.00015 U	0.00013 U	0.00016 U	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00043 U	0.00039 U	0.00034 U	0.0004 U	0.00036 U	0.00044 U	0.00037 U	0.00043 U	0.00037 U	0.00041 U	0.00045 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00027 U	0.00025 U	0.00021 U	0.00026 U	0.00023 U	0.00028 U	0.00023 U	0.00027 U	0.00024 U	0.00026 U	0.00028 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00033 U	0.0003 U	0.00026 U	0.00031 U	0.00028 U	0.00034 U	0.00028 U	0.00033 U	0.00029 U	0.00032 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.0004 U	0.00036 U	0.00031 U	0.00038 U	0.00034 U	0.00041 U	0.00034 U	0.0004 U	0.00035 U	0.00038 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00011 U	0.000096 U	0.000084 U	0.0001 U	0.00009 U	0.00011 U	0.000091 U	0.00011 U	0.000094 U	0.0001 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00031 U	0.00028 U	0.00024 U	0.00029 U	0.00026 U	0.00032 U	0.00027 U	0.00031 U	0.00027 U	0.0003 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00046 U	0.00041 U	0.00036 U	0.00043 U	0.00039 U	0.00048 U	0.00039 U	0.00046 U	0.0004 U	0.00044 U	0.00048 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00014 U	0.00012 U	0.00011 U	0.00013 U	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.00013 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00011 U	0.000096 U	0.000084 U	0.0001 U	0.00009 U	0.00011 U	0.000091 U	0.00011 U	0.000094 U	0.0001 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00017 U	0.00015 U	0.00013 U	0.00016 U	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00012 U	0.00011 U	0.000092 U	0.00011 U	0.000098 U	0.00012 U	0.0001 U	0.00012 U	0.0001 U	0.00011 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00013 U	0.00011 U	0.000099 U	0.00012 U	0.00011 U	0.00013 U	0.00011 U	0.00013 U	0.00011 U	0.00012 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00075 U	0.0033 J	0.00059 U	0.008	0.0015 J	0.00078 U	0.0014 J	0.00075 U	0.0015 J	0.00071 U	0.00078 UJ
2-Hexanone	20	130	0.00088	mg/kg	0.00092 U	0.00082 U	0.00072 U	0.0012 J	0.00077 U	0.00095 U	0.00078 U	0.00092 U	0.0008 U	0.00087 U	0.00096 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0022 U	0.0019 U	0.0017 U	0.0043 J	0.0018 U	0.0022 U	0.0018 U	0.0022 U	0.0019 U	0.0021 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.0072	0.076	0.0049	0.065	0.012	0.011	0.0089	0.0097	0.0095	0.0063	0.0056 J
Benzene	1.2	5.1	0.00023	mg/kg	0.0002 U	0.00027 J	0.0027	0.0011	0.00027 J	0.00038 J	0.00021 J	0.0002 U	0.00023 J	0.00019 U	0.00047 J
Bromoform	19	86	0.00087	mg/kg	0.00013 U	0.00011 U	0.000099 U	0.00012 U	0.00011 U	0.00013 U	0.00011 U	0.00013 U	0.00011 U	0.00012 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00031 U	0.00028 U	0.00024 U	0.00029 U	0.00026 U	0.00032 U	0.00027 U	0.00031 U	0.00027 U	0.0003 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.00077 J	0.00063 J	0.00038 J	0.0021	0.00061 J	0.0017	0.00044 J	0.00042 U	0.00066 J	0.0004 U	0.00044 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00042 U	0.00038 U	0.00033 U	0.0004 U	0.00035 U	0.00043 U	0.00036 U	0.00042 U	0.00037 U	0.0004 U	0.00044 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00014 U	0.00012 U	0.00011 U	0.00013 U	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.00013 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00017 U	0.00015 U	0.00013 U	0.00016 U	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00015 U	0.00013 U	0.00011 U	0.00014 U	0.00012 U	0.00015 U	0.00012 U	0.00015 U	0.00013 U	0.00014 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00034 U	0.00031 U	0.00027 U	0.00032 U	0.00029 U	0.00035 U	0.00029 U	0.00034 U	0.0003 U	0.00032 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00021 U	0.00018 U	0.00016 U	0.00019 U	0.00017 U	0.00021 U	0.00017 U	0.00021 U	0.00018 U	0.00019 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.00037 U	0.00033 U	0.00029 U	0.00035 U	0.00031 U	0.00038 U	0.00032 U	0.00037 U	0.00032 U	0.00035 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00021 U	0.00019 U	0.00017 U	0.0002 U	0.00018 U	0.00022 U	0.00018 U	0.00022 U	0.00019 U	0.0002 U	0.00022 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00015 U	0.00013 U	0.00011 U	0.00014 U	0.00012 U	0.00015 U	0.00012 U	0.00015 U	0.00013 U	0.00014 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00045 U	0.0004 U	0.0062	0.00042 U	0.00075 J+	0.00093 J+	0.00048 J+	0.00045 U	0.00058 J+	0.00043 U	0.0011 J+
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00037 U	0.00033 U	0.00029 U	0.00035 U	0.00031 U	0.00038 U	0.00032 U	0.00037 U	0.00032 U	0.00035 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00031 U	0.00028 U	0.00024 U	0.00029 U	0.00026 U	0.00032 U	0.00027 U	0.00031 U	0.00027 U	0.0003 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00018 U	0.00016 U	0.0029	0.0011	0.00021 J	0.00037 J	0.00015 U	0.00018 U	0.00015 U	0.00017 U	0.00045 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00012 U	0.00011 U	0.000092 U	0.00011 U	0.000098 U	0.00012 U	0.0001 U	0.00012 U	0.0001 U	0.00011 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00017 U	0.00015 U	0.00037 J	0.0003 J	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00088 U	0.014	0.00069 U	0.00083 U	0.00074 U	0.00091 U	0.00075 U	0.00088 U	0.00077 U	0.00083 U	0.00091 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00017 U	0.00015 U	0.00013 U	0.00016 U	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.00049 U	0.00044 U	0.012	0.00046 U	0.001	0.0015	0.00056 J	0.00049 U	0.0008 J	0.00046 U	0.0018
Methylene Chloride	35	320	0.0027	mg/kg	0.00031 U	0.00028 U	0.00024 U	0.00029 U	0.00026 U	0.00032 U	0.00027 U	0.00031 U	0.00027 U	0.0003 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00032 J	0.000096 U	0.0081	0.0042	0.00076 J	0.0013	0.00041 J	0.00029 J	0.00058 J	0.00032 J	0.0017
o-Xylene	65	280	0.019	mg/kg	0.00016 U	0.00014 U	0.0028	0.0051	0.00024 J	0.00037 J	0.00017 J	0.00016 U	0.00016 J	0.00015 U	0.00058 J
Styrene	600	3500	0.13	mg/kg	0.00015 U	0.00013 U	0.00011 U	0.0003 J	0.00012 U	0.00015 U	0.00012 U	0.00015 U	0.00013 U	0.00014 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00027 U	0.00025 U	0.00021 U	0.00026 U	0.00023 U	0.00028 U	0.00023 U	0.00027 U	0.00024 U	0.00026 U	0.00028 U
Toluene	490	4700	0.076	mg/kg	0.00041 J	0.00019 J	0.012	0.012	0.0011	0.0015	0.00059 J	0.00045 J	0.00077 J	0.00046 J	0.0022 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00038 U	0.00034 U	0.0003 U	0.00036 U	0.00032 U	0.00039 U	0.00032 U	0.00038 U	0.00033 U	0.00036 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000098 U	0.000088 U	0.000076 U	0.000092 U	0.000082 U	0.0001 U	0.000083 U	0.000098 U	0.000085 U	0.000093 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00025 U	0.00023 U	0.0002 U	0.00024 U	0.00021 U	0.00026 U	0.00022 U	0.00025 U	0.00022 U	0.00024 U	0.00026 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00033 U	0.0003 U	0.00026 U	0.00031 U	0.00028 U	0.00034 U	0.00028 U	0.00033 U	0.00029 U	0.00032 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00038 U	0.00034 U	0.0003 U	0.00036 U	0.00032 U	0.00039 U	0.00032 U	0.00038 U	0.00033 U	0.00036 U	0.0004 U

Preliminary Under EPA and DEQ Review

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-071	CFSB-073	CFSB-073	CFSB-074	CFSB-074	CFSB-075	CFSB-075	CFSB-079	CFSB-079	CFSB-080	CFSB-080
			Sample Date:	5/27/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-DUP7-SO	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12	CFSB-074-SO-0.5-2	CFSB-074-SO-10-12	CFSB-075-SO-0.5-2	CFSB-075-SO-10-12	CFSB-079-SO-0.5-2	CFSB-079-SO-10-12	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00033 U	0.0004 U	0.00039 U	0.00038 U	0.00043 U	0.00037 U	0.0004 J	0.00034 U	0.00036 U	0.0004 U	0.00034 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00018 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00015 U	0.00016 U	0.00018 U	0.00015 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00038 U	0.00046 U	0.00045 U	0.00044 U	0.0005 U	0.00043 U	0.00042 U	0.0004 U	0.00042 U	0.00046 U	0.00039 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00024 U	0.0003 U	0.00029 U	0.00028 U	0.00032 U	0.00027 U	0.00027 U	0.00025 U	0.00026 U	0.00029 U	0.00025 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00029 U	0.00036 U	0.00035 U	0.00034 U	0.00039 U	0.00033 U	0.00033 U	0.00031 U	0.00032 U	0.00036 U	0.0003 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00035 U	0.00043 U	0.00042 U	0.00041 U	0.00047 U	0.0004 U	0.00039 U	0.00037 U	0.00039 U	0.00043 U	0.00036 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000094 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U	0.00011 U	0.00011 U	0.000099 U	0.0001 U	0.00012 U	0.000098 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00027 U	0.00034 U	0.00033 U	0.00032 U	0.00036 U	0.00031 U	0.00031 U	0.00029 U	0.0003 U	0.00034 U	0.00028 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.0004 U	0.0005 U	0.00048 U	0.00047 U	0.00053 U	0.00046 U	0.00045 U	0.00042 U	0.00044 U	0.00049 U	0.00042 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00012 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00012 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000094 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U	0.00011 U	0.00011 U	0.000099 U	0.0001 U	0.00012 U	0.000098 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00018 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00015 U	0.00016 U	0.00018 U	0.00015 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.0001 U	0.00013 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U	0.00011 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00011 U	0.00014 U	0.00013 U	0.00013 U	0.00015 U	0.00013 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0015 J	0.00081 U	0.00079 U	0.00077 U	0.00088 U	0.00075 U	0.00074 U	0.0049	0.00073 U	0.00081 U	0.00068 U
2-Hexanone	20	130	0.00088	mg/kg	0.00081 U	0.00099 U	0.00096 U	0.00094 U	0.0011 U	0.00092 U	0.0009 U	0.00085 U	0.00089 U	0.00099 U	0.00083 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0019 U	0.0023 U	0.0023 U	0.0022 U	0.0025 U	0.0022 U	0.0021 U	0.002 U	0.0021 U	0.0023 U	0.002 U
Acetone	6100	67000	0.29	mg/kg	0.017 J	0.024	0.0058	0.0011 U	0.0081	0.017	0.028	0.04	0.014	0.033	0.0098
Benzene	1.2	5.1	0.00023	mg/kg	0.00035 J	0.00021 U	0.00022 J	0.0002 U	0.00026 J	0.00056 J	0.00071 J	0.00018 U	0.00036 J	0.00021 U	0.00066 J
Bromoform	19	86	0.00087	mg/kg	0.00011 U	0.00014 U	0.00013 U	0.00013 U	0.00015 U	0.00013 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00027 U	0.00034 U	0.00033 U	0.00032 U	0.00036 U	0.00031 U	0.00031 U	0.00029 U	0.0003 U	0.00034 U	0.00028 U
Carbon disulfide	77	350	0.024	mg/kg	0.00037 U	0.00045 U	0.00063 J	0.00043 U	0.00079 J	0.00087 J	0.0009 J	0.00039 U	0.0016	0.0005 J	0.00078 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00037 U	0.00045 U	0.00044 U	0.00043 U	0.00049 U	0.00042 U	0.00041 U	0.00039 U	0.00041 U	0.00045 U	0.00038 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00012 U	0.00015 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00012 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00018 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00015 U	0.00016 U	0.00018 U	0.00015 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00016 U	0.00015 U	0.00015 U	0.00017 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.00016 U	0.00013 U
Chloroethane	1400	5700	0.59	mg/kg	0.0003 U	0.00037 UJ	0.00036 UJ	0.00035 U	0.0004 UJ	0.00034 UJ	0.00034 UJ	0.00032 UJ	0.00033 UJ	0.00037 UJ	0.00031 UJ
Chloroform	0.32	1.4	0.000061	mg/kg	0.00018 U	0.00022 U	0.00022 U	0.00021 U	0.00024 U	0.00021 U	0.0002 U	0.00019 U	0.0002 U	0.00022 U	0.00019 U
Chloromethane	11	46	0.0049	mg/kg	0.00033 U	0.0004 U	0.00039 U	0.00038 U	0.00043 U	0.00037 U	0.00037 U	0.00034 U	0.00036 U	0.0004 U	0.00034 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00019 U	0.00023 U	0.00023 U	0.00022 U	0.00025 U	0.00021 U	0.00021 U	0.0002 U	0.00021 U	0.00023 U	0.0002 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00016 U	0.00015 U	0.00015 U	0.00017 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.00016 U	0.00013 U
Cyclohexane	650	2700	1.3	mg/kg	0.0011 J+	0.00049 U	0.00047 U	0.00046 U	0.00052 U	0.00084 J	0.0011	0.00042 U	0.00043 U	0.00048 U	0.0016
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00033 U	0.0004 U	0.00039 U	0.00038 U	0.00043 U	0.00037 U	0.00037 U	0.00034 U	0.00036 U	0.0004 U	0.00034 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00027 U	0.00034 U	0.00033 U	0.00032 U	0.00036 U	0.00031 U	0.00031 U	0.00029 U	0.0003 U	0.00034 U	0.00028 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00027 J	0.00019 U	0.00018 U	0.00018 U	0.0002 U	0.0002 J	0.00017 U	0.00016 U	0.00017 U	0.00019 U	0.00042 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.0001 U	0.00013 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U	0.00013 U	0.00011 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00018 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00015 U	0.00016 U	0.00018 U	0.00015 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00077 U	0.00095 U	0.00092 U	0.0009 U	0.001 U	0.00088 U	0.00087 U	0.00081 U	0.00085 U	0.00095 U	0.0008 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00018 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00015 U	0.00016 U	0.00018 U	0.00015 U
Methylcyclohexane	--	--	--	mg/kg	0.0022	0.00053 U	0.00051 U	0.00073 J	0.00089 J	0.0016	0.002	0.00045 U	0.00047 U	0.00053 U	0.0024
Methylene Chloride	35	320	0.0027	mg/kg	0.00027 U	0.00034 U	0.00033 U	0.00032 U	0.00036 U	0.00031 U	0.00031 U	0.00029 U	0.0003 U	0.00034 U	0.00028 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.0011	0.00012 U	0.00039 J	0.00056 J	0.00051 J	0.00056 J	0.00043 J	0.000099 U	0.00034 J	0.00012 U	0.0012
o-Xylene	65	280	0.019	mg/kg	0.0003 J	0.00017 U	0.00016 U	0.00021 J	0.00021 J	0.00018 J	0.00015 U	0.00014 U	0.00015 U	0.00017 U	0.00044 J
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00016 U	0.00015 U	0.00015 U	0.00017 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.00016 U	0.00013 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00024 U	0.0003 U	0.00029 U	0.00028 U	0.00032 U	0.00027 U	0.00027 U	0.00025 U	0.00026 U	0.00029 U	0.00025 U
Toluene	490	4700	0.076	mg/kg	0.0013 J	0.0002 U	0.00066 J	0.00079 J	0.00088 J	0.0013	0.0011	0.00017 U	0.00062 J	0.0002 U	0.0018
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00033 U	0.00041 U	0.0004 U	0.00039 U	0.00044 U	0.00038 U	0.00037 U	0.00035 U	0.00037 U	0.00041 U	0.00035 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000086 U	0.00011 U	0.0001 U	0.0001 U	0.00011 U	0.000098 U	0.000096 U	0.00009 U	0.000094 U	0.00011 U	0.000089 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00022 U	0.00027 U	0.00027 U	0.00026 U	0.0003 U	0.00025 U	0.00025 U	0.00023 U	0.00025 U	0.00027 U	0.00023 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00029 U	0.00036 U	0.00035 U	0.00034 U	0.00039 U	0.00033 U	0.00033 U	0.00031 U	0.00032 U	0.00036 U	0.0003 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00033 U	0.00041 U	0.0004 U	0.00039 U	0.00044 U	0.00038 U	0.00037 U	0.00035 U	0.00037 U	0.00041 U	0.00035 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-082	CFSB-082	CFSB-084	CFSB-084	CFSB-086	CFSB-086	CFSB-087	CFSB-087	CFSB-088	CFSB-088	CFSB-092
			Sample Date:	6/1/2016	6/1/2016	5/27/2016	5/27/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFSB-082-SO-0.5-2	CFSB-082-SO-10-12	CFSB-084-SO-0.5-2	CFSB-084-SO-10-12	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0.5-2	CFSB-087-SO-10-12	CFSB-088-SO-0.5-2	CFSB-088-SO-10-12	CFSB-092-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00035 U	0.00037 U	0.00038 U	0.00031 U	0.00031 U	0.00038 U	0.00031 U	0.0003 U	0.00031 U	0.00036 U	0.00031 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00016 U	0.00016 U	0.00017 U	0.00014 U	0.00014 U	0.00017 U	0.00014 U	0.00013 U	0.00014 U	0.00016 U	0.00014 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00041 U	0.00043 U	0.00043 U	0.00036 U	0.00036 UJ	0.00044 UJ	0.00036 UJ	0.00034 UJ	0.00036 U	0.00041 UJ	0.00035 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00026 U	0.00027 U	0.00028 U	0.00023 U	0.00023 U	0.00028 U	0.00023 U	0.00022 U	0.00023 U	0.00026 U	0.00023 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00031 U	0.00033 U	0.00034 U	0.00028 U	0.00028 U	0.00034 U	0.00028 U	0.00027 U	0.00028 U	0.00032 U	0.00027 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00038 U	0.0004 U	0.00041 U	0.00034 U	0.00034 U	0.00041 U	0.00034 U	0.00032 U	0.00034 U	0.00038 U	0.00033 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.0001 U	0.00011 U	0.00011 U	0.000091 U	0.000091 U	0.00011 U	0.00009 U	0.000086 U	0.000091 U	0.0001 U	0.000089 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.0003 U	0.00031 U	0.00032 U	0.00026 U	0.00027 U	0.00032 U	0.00026 U	0.00025 U	0.00026 U	0.0003 U	0.00026 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00043 U	0.00046 U	0.00046 U	0.00039 U	0.00039 U	0.00047 U	0.00038 U	0.00037 U	0.00039 U	0.00044 U	0.00038 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00013 U	0.00014 U	0.00014 U	0.00012 U	0.00012 U	0.00014 U	0.00011 U	0.00011 U	0.00012 U	0.00013 U	0.00011 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.0001 U	0.00011 U	0.00011 U	0.000091 U	0.000091 U	0.00011 U	0.00009 U	0.000086 U	0.000091 U	0.0001 U	0.000089 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00016 U	0.00016 U	0.00017 U	0.00014 U	0.00014 U	0.00017 U	0.00014 U	0.00013 U	0.00014 U	0.00016 U	0.00014 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.00012 U	0.00012 U	0.000099 U	0.000099 U	0.00012 U	0.000098 U	0.000094 U	0.000099 U	0.00011 U	0.000097 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00012 U	0.00013 U	0.00013 U	0.00011 U	0.00011 U	0.00013 U	0.00011 U	0.0001 U	0.00011 U	0.00012 U	0.0001 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00071 U	0.0017 J	0.0021 J	0.00064 U	0.00064 U	0.00077 U	0.00063 U	0.0006 U	0.00063 U	0.00072 U	0.00062 U
2-Hexanone	20	130	0.00088	mg/kg	0.00087 U	0.00091 U	0.00093 U	0.00078 U	0.00078 U	0.00094 U	0.00077 U	0.00073 U	0.00078 U	0.00088 U	0.00076 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.002 U	0.0022 U	0.0022 U	0.0018 U	0.0018 U	0.0022 U	0.0018 U	0.0017 U	0.0018 U	0.0021 U	0.0018 U
Acetone	6100	67000	0.29	mg/kg	0.015	0.049	0.019	0.0057	0.012	0.0062	0.012	0.0075	0.0099	0.0042 J	0.017
Benzene	1.2	5.1	0.00023	mg/kg	0.00043 J	0.00019 U	0.00042 J	0.00028 J	0.00017 U	0.00023 J	0.00052 J	0.00027 J	0.00016 U	0.00019 U	0.00016 U
Bromoform	19	86	0.00087	mg/kg	0.00012 U	0.00013 U	0.00013 U	0.00011 U	0.00011 U	0.00013 U	0.00011 U	0.0001 U	0.00011 U	0.00012 U	0.0001 U
Bromomethane	0.68	3	0.00019	mg/kg	0.0003 U	0.00031 U	0.00032 U	0.00026 U	0.00027 UJ	0.00032 UJ	0.00026 UJ	0.00025 UJ	0.00026 UJ	0.0003 UJ	0.00026 UJ
Carbon disulfide	77	350	0.024	mg/kg	0.0014	0.0017	0.0012	0.00036 U	0.00076 J	0.00081 J	0.00094	0.00078	0.00038 J	0.0004 U	0.00035 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.0004 U	0.00042 U	0.00043 U	0.00036 U	0.00036 U	0.00043 U	0.00035 U	0.00034 U	0.00035 U	0.0004 U	0.00035 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00013 U	0.00014 U	0.00014 U	0.00012 U	0.00012 U	0.00014 U	0.00011 U	0.00011 U	0.00012 U	0.00013 U	0.00011 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00016 U	0.00016 U	0.00017 U	0.00014 U	0.00014 U	0.00017 U	0.00014 U	0.00013 U	0.00014 U	0.00016 U	0.00014 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00014 U	0.00015 U	0.00015 U	0.00012 U	0.00012 U	0.00015 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U
Chloroethane	1400	5700	0.59	mg/kg	0.00032 UJ	0.00034 UJ	0.00035 U	0.00029 U	0.00029 UJ	0.00035 UJ	0.00029 UJ	0.00027 UJ	0.00029 UJ	0.00033 UJ	0.00028 UJ
Chloroform	0.32	1.4	0.000061	mg/kg	0.00019 U	0.0002 U	0.00021 U	0.00017 U	0.00017 U	0.00021 U	0.00017 U	0.00016 U	0.00017 U	0.0002 U	0.00017 U
Chloromethane	11	46	0.0049	mg/kg	0.00035 U	0.00037 U	0.00038 U	0.00031 U	0.00031 U	0.00038 U	0.00031 U	0.0003 U	0.00031 U	0.00036 U	0.00031 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.0002 U	0.00021 U	0.00022 U	0.00018 U	0.00018 U	0.00022 U	0.00018 U	0.00017 U	0.00018 U	0.00021 U	0.00018 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00014 U	0.00015 U	0.00015 U	0.00012 U	0.00012 U	0.00015 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U
Cyclohexane	650	2700	1.3	mg/kg	0.00061 J	0.00045 U	0.0011 J+	0.0005 J+	0.00038 UJ	0.00046 UJ	0.0012 J-	0.00036 UJ	0.00038 U	0.00043 UJ	0.00037 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00035 U	0.00037 U	0.00038 U	0.00031 U	0.00031 U	0.00038 U	0.00031 U	0.0003 U	0.00031 U	0.00036 U	0.00031 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.0003 U	0.00031 U	0.00032 U	0.00026 U	0.00027 UJ	0.00032 UJ	0.00026 UJ	0.00025 UJ	0.00026 U	0.0003 UJ	0.00026 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00017 U	0.00017 U	0.00026 J	0.00021 J	0.00015 U	0.00018 U	0.0003 J	0.00014 U	0.00015 U	0.00017 J	0.00015 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.00012 U	0.00012 U	0.000099 U	0.000099 U	0.00012 U	0.000098 U	0.000094 U	0.000099 U	0.00011 U	0.000097 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00016 U	0.00016 U	0.00017 U	0.00014 U	0.00014 U	0.00017 U	0.00014 U	0.00013 U	0.00014 U	0.00016 U	0.00014 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00083 U	0.014	0.00089 U	0.00074 U	0.00075 U	0.0009 U	0.00074 U	0.0007 U	0.00074 U	0.00084 U	0.00073 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00016 U	0.00016 U	0.00017 U	0.00014 U	0.00014 U	0.00017 U	0.00014 U	0.00013 U	0.00014 U	0.00016 U	0.00014 U
Methylcyclohexane	--	--	--	mg/kg	0.0012	0.00048 U	0.0015	0.0008 J	0.00041 UJ	0.0005 J-	0.0021 J-	0.00039 J-	0.00041 U	0.00078 J-	0.0004 U
Methylene Chloride	35	320	0.0027	mg/kg	0.0003 U	0.00031 U	0.00032 U	0.00026 U	0.00027 U	0.00032 U	0.00026 U	0.00025 U	0.00026 U	0.0003 U	0.00026 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00048 J	0.00014 J	0.00091 J	0.00053 J	0.00022 J	0.0004 J	0.00077 J	0.000086 U	0.00015 J	0.00056 J	0.000097 J
o-Xylene	65	280	0.019	mg/kg	0.00015 U	0.00015 U	0.00032 J	0.00019 J	0.00013 U	0.00016 U	0.0002 J	0.00012 U	0.00013 U	0.00018 J	0.00013 U
Styrene	600	3500	0.13	mg/kg	0.00014 U	0.00015 U	0.00015 U	0.00012 U	0.00012 U	0.00015 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00033 J	0.00027 U	0.00028 U	0.00023 U	0.00023 U	0.00028 U	0.00023 U	0.00022 U	0.00023 U	0.00026 U	0.00023 U
Toluene	490	4700	0.076	mg/kg	0.00086 J	0.00033 J	0.0015	0.0009	0.00036 J	0.0006 J	0.0015	0.00028 J	0.0003 J	0.0009 J	0.00022 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00036 U	0.00038 U	0.00039 U	0.00032 U	0.00032 U	0.00039 U	0.00032 U	0.0003 U	0.00032 U	0.00037 U	0.00031 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000092 U	0.000097 U	0.000099 U	0.000083 U	0.000083 U	0.0001 U	0.000082 U	0.000078 U	0.000082 U	0.000094 U	0.00008.1 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00024 U	0.00025 U	0.00026 U	0.00022 U	0.00022 U	0.00026 U	0.00021 U	0.0002 U	0.00021 U	0.00024 U	0.00021 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00031 U	0.00033 U	0.00034 U	0.00028 U	0.00028 UJ	0.00034 UJ	0.00028 UJ	0.00027 UJ	0.00028 U	0.00032 UJ	0.00027 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00036 U	0.00038 U	0.00039 U	0.00032 U	0.00032 U	0.00039 U	0.00032 U	0.0003 U	0.00032 U	0.00037 U	0.00031 U

Preliminary Under EPA and DEQ Review

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-092	CFSB-094	CFSB-094	CFSB-095	CFSB-095	CFSB-097	CFSB-097	CFSB-098	CFSB-098	CFSB-099	CFSB-099
			Sample Date:	5/26/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-092-SO-10-12	CFSB-094-SO-0.5-2.0	CFSB-094-SO-10-12	CFSB-095-SO-0.5-2.0	CFSB-095-SO-10-12	CFSB-097-SO-0.5-2	CFSB-097-SO-10-12	CFSB-098-SO-0.5-2	CFSB-098-SO-10-12	CFSB-099-SO-0.5-2	CFSB-099-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00033 U	0.00036 U	0.00036 U	0.00035 U	0.00041 U	0.00036 U	0.00035 U	0.00033 U	0.00037 U	0.00036 U	0.00037 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00016 U	0.00016 U	0.00016 U	0.00018 U	0.00016 U	0.00016 U	0.00015 U	0.00017 U	0.00016 U	0.00016 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00038 U	0.00041 U	0.00042 U	0.00041 U	0.00048 U	0.00042 U	0.00041 U	0.00038 U	0.00043 U	0.00042 U	0.00043 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00024 U	0.00026 U	0.00027 U	0.00026 U	0.0003 U	0.00026 U	0.00026 U	0.00024 U	0.00027 U	0.00026 U	0.00027 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00029 U	0.00032 U	0.00033 U	0.00032 U	0.00037 U	0.00032 U	0.00032 U	0.00029 U	0.00033 U	0.00032 U	0.00033 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00036 U	0.00038 U	0.00039 U	0.00038 U	0.00045 U	0.00039 U	0.00038 U	0.00035 U	0.0004 U	0.00039 U	0.0004 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000095 U	0.0001 U	0.00011 U	0.0001 U	0.00012 U	0.0001 U	0.0001 U	0.000094 U	0.00011 U	0.0001 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00028 U	0.0003 U	0.00031 U	0.0003 U	0.00035 U	0.0003 U	0.0003 U	0.00027 U	0.00031 U	0.0003 U	0.00031 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00041 U	0.00044 U	0.00045 U	0.00044 U	0.00051 U	0.00044 U	0.00044 U	0.0004 U	0.00046 U	0.00044 U	0.00046 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00012 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00013 U	0.00013 U	0.00012 U	0.00014 U	0.00013 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000095 U	0.0001 U	0.00011 U	0.0001 U	0.00012 U	0.0001 U	0.0001 U	0.000094 U	0.00011 U	0.0001 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00016 U	0.00016 U	0.00016 U	0.00018 U	0.00016 U	0.00016 U	0.00015 U	0.00017 U	0.00016 U	0.00016 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.0001 U	0.00011 U	0.00012 U	0.00011 U	0.00013 U	0.00011 U	0.00011 U	0.0001 U	0.00012 U	0.00011 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00011 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00012 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00067 U	0.00072 U	0.00074 U	0.00072 U	0.00084 U	0.014	0.00072 U	0.00066 U	0.00075 U	0.00073 U	0.00075 U
2-Hexanone	20	130	0.00088	mg/kg	0.00081 U	0.00088 U	0.0009 U	0.00087 U	0.001 U	0.00089 U	0.00088 U	0.00081 U	0.00092 U	0.00089 U	0.00091 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0019 U	0.0021 U	0.0021 U	0.0021 U	0.0024 U	0.0021 U	0.0021 U	0.0019 U	0.0022 U	0.0021 U	0.0021 U
Acetone	6100	67000	0.29	mg/kg	0.0033 J	0.022	0.012	0.017	0.016	0.11	0.0051	0.0055	0.0074	0.012	0.012
Benzene	1.2	5.1	0.00023	mg/kg	0.00017 U	0.00032 J	0.00019 U	0.00025 J	0.00028 J	0.00031 J	0.00025 J	0.00033 J	0.00057 J	0.00019 J	0.00028 J
Bromoform	19	86	0.00087	mg/kg	0.00011 U	0.00012 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00012 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00028 UJ	0.0003 U	0.00031 U	0.0003 U	0.00035 U	0.0003 U	0.0003 U	0.00027 U	0.00031 U	0.0003 U	0.00031 U
Carbon disulfide	77	350	0.024	mg/kg	0.00037 U	0.00083 J	0.00041 U	0.00068 J	0.00047 U	0.00041 U	0.0004 U	0.00037 U	0.00078 J	0.00041 U	0.00042 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00037 U	0.0004 U	0.00041 U	0.0004 U	0.00047 U	0.00041 U	0.0004 U	0.00037 U	0.00042 U	0.00041 U	0.00042 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00012 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00013 U	0.00013 U	0.00012 U	0.00014 U	0.00013 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00016 U	0.00016 U	0.00016 U	0.00018 U	0.00016 U	0.00016 U	0.00015 U	0.00017 U	0.00016 U	0.00016 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00014 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.0003 UJ	0.00033 U	0.00034 U	0.00033 U	0.00038 U	0.00033 U	0.00033 U	0.0003 U	0.00034 U	0.00033 U	0.00034 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00018 U	0.0002 U	0.0002 U	0.0002 U	0.00023 U	0.0002 U	0.0002 U	0.00018 U	0.00021 U	0.0002 U	0.0002 U
Chloromethane	11	46	0.0049	mg/kg	0.00033 U	0.00036 U	0.00036 U	0.00035 U	0.00041 U	0.00036 U	0.00035 U	0.00033 U	0.00037 U	0.00036 U	0.00037 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00019 U	0.00021 U	0.00021 U	0.0002 U	0.00024 U	0.00021 U	0.00021 U	0.00019 U	0.00022 U	0.00021 U	0.00021 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00014 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.0004 U	0.00043 U	0.00044 U	0.00043 U	0.0005 U	0.00043 U	0.00058 J	0.00073 J	0.0013	0.00043 U	0.00076 J
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00033 U	0.00036 U	0.00036 U	0.00035 U	0.00041 U	0.00036 U	0.00035 U	0.00033 U	0.00037 U	0.00036 U	0.00037 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00028 U	0.0003 U	0.00031 U	0.0003 U	0.00035 U	0.0003 U	0.0003 U	0.00027 U	0.00031 U	0.0003 U	0.00031 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.0002 U	0.00017 U	0.0002 J	0.00037 J	0.0007 J	0.00017 U	0.00034 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.0001 U	0.00011 U	0.00012 U	0.00011 U	0.00013 U	0.00011 U	0.00011 U	0.0001 U	0.00012 U	0.00011 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00016 U	0.00016 U	0.00016 U	0.00018 U	0.00016 U	0.00016 U	0.00015 U	0.00017 U	0.00016 U	0.00016 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00078 U	0.00084 U	0.00086 U	0.00084 U	0.00098 U	0.02	0.00084 U	0.00077 U	0.00088 U	0.00085 U	0.00087 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00016 U	0.00016 U	0.00016 U	0.00018 U	0.00016 U	0.00016 U	0.00015 U	0.00017 U	0.00016 U	0.00016 U
Methylcyclohexane	--	--	--	mg/kg	0.00071 J	0.00078 J	0.00048 U	0.00078 J	0.00066 J	0.00047 U	0.001	0.0015	0.0023	0.00047 J	0.0015
Methylene Chloride	35	320	0.0027	mg/kg	0.00028 U	0.0003 U	0.00031 U	0.0003 U	0.00035 U	0.0021	0.0003 U	0.00027 U	0.00031 U	0.0003 U	0.00031 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00059 J	0.00028 J	0.00011 U	0.0002 J	0.00042 J	0.0001 U	0.00064 J	0.0013	0.0019	0.00038 J	0.0011
o-Xylene	65	280	0.019	mg/kg	0.00018 J	0.00015 U	0.00015 U	0.00015 U	0.00017 U	0.00015 U	0.00022 J	0.00038 J	0.00064 J	0.00015 U	0.00035 J
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00014 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00024 U	0.00026 U	0.00027 U	0.00026 U	0.0003 U	0.00026 U	0.00026 U	0.00024 U	0.00027 U	0.00026 U	0.00027 U
Toluene	490	4700	0.076	mg/kg	0.00077 J	0.00064 J	0.00025 J	0.00054 J	0.0009 J	0.0002 J	0.0011	0.0017	0.0028	0.0006 J	0.0014
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00034 U	0.00036 U	0.00037 U	0.00036 U	0.00042 U	0.00037 U	0.00036 U	0.00033 U	0.00038 U	0.00037 U	0.00038 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000087 U	0.000094 U	0.000096 U	0.000093 U	0.00011 U	0.000094 U	0.000093 U	0.000086 U	0.000098 U	0.000094 U	0.000097 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00023 U	0.00024 U	0.00025 U	0.00024 U	0.00028 U	0.00025 U	0.00024 U	0.00022 U	0.00025 U	0.00025 U	0.00025 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00029 U	0.00032 U	0.00033 U	0.00032 U	0.00037 U	0.00032 U	0.00032 U	0.00029 U	0.00033 U	0.00032 U	0.00033 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00034 U	0.00036 U	0.00037 U	0.00036 U	0.00042 U	0.00037 U	0.00036 U	0.00033 U	0.00038 U	0.00037 U	0.00038 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-100	CFSB-100	CFSB-101	CFSB-101	CFSB-102	CFSB-102	CFSB-104	CFSB-104	CFSB-109	CFSB-109	CFSB-110
			Sample Date:	5/24/2016	5/24/2016	7/21/2016	7/21/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/14/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
			Sample Designation:	CFSB-100-SO-0.5-2	CFSB-100-SO-10-12	CFSB-101-SO-0.5-2	CFSB-101-SO-10-12	CFSB-102-SO-0.5-2	CFSB-102-SO-10-12	CFSB-104-SO-0.5-2	CFSB-104-SO-10-12	CFSB-109-SO-0.5-2	CFSB-109-SO-10-12	CFSB-110-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00036 U	0.0003 U	0.00046 U	0.00035 U	0.0003 U	0.00043 R	0.00044 U	0.00038 U	0.00068 U	0.00034 U	0.00023 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00016 U	0.00013 U	0.00021 U	0.00016 U	0.00014 U	0.00019 R	0.0002 U	0.00017 U	0.0003 UJ	0.00015 U	0.0001 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00041 U	0.00034 U	0.00054 U	0.00041 U	0.00035 U	0.0005 R	0.00051 U	0.00044 U	0.00079 U	0.00039 U	0.00026 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00026 U	0.00022 U	0.00034 U	0.00026 U	0.00022 U	0.00032 R	0.00033 U	0.00028 U	0.0005 U	0.00025 U	0.00017 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00032 U	0.00026 U	0.00041 U	0.00031 U	0.00027 U	0.00039 R	0.0004 U	0.00034 U	0.00061 U	0.0003 U	0.0002 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00038 U	0.00032 U	0.0005 U	0.00038 U	0.00033 U	0.00047 R	0.00048 U	0.00041 U	0.00073 U	0.00037 U	0.00025 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.0001 U	0.000085 U	0.00013 U	0.0001 U	0.000088 U	0.00012 R	0.00013 U	0.00011 U	0.0002 UJ	0.000098 U	0.000066 UJ
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.0003 U	0.00025 U	0.00039 U	0.00029 U	0.00026 U	0.00036 R	0.00037 U	0.00032 U	0.00057 UJ	0.00029 U	0.00019 UJ
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00044 U	0.00037 U	0.00057 U	0.00043 U	0.00037 U	0.00053 R	0.00055 U	0.00047 U	0.00084 UJ	0.00042 U	0.00028 UJ
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00013 U	0.00011 U	0.00017 U	0.00013 U	0.00011 U	0.00016 R	0.00016 U	0.00014 U	0.00025 UJ	0.00013 U	0.000084 UJ
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.0001 U	0.000085 U	0.00013 U	0.0001 U	0.000088 U	0.00012 R	0.00013 U	0.00011 U	0.0002 U	0.000098 U	0.000066 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00016 U	0.00013 U	0.00021 U	0.00016 U	0.00014 U	0.00019 R	0.0002 U	0.00017 U	0.0003 U	0.00015 U	0.0001 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.000093 U	0.00015 U	0.00011 U	0.000096 U	0.00014 R	0.00014 U	0.00012 U	0.00021 UJ	0.00011 U	0.000072 UJ
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00012 U	0.0001 U	0.00016 U	0.00012 U	0.0001 U	0.00015 R	0.00015 U	0.00013 U	0.00023 UJ	0.00012 U	0.00021 J
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00072 U	0.0006 U	0.003 J	0.00071 U	0.0026 J	0.00087 R	0.0052 J	0.00077 U	0.0078 J	0.0015 J	0.0034
2-Hexanone	20	130	0.00088	mg/kg	0.00088 U	0.00073 U	0.0011 U	0.00087 U	0.00075 U	0.0011 R	0.0011 U	0.00094 U	0.0017 U	0.00084 U	0.00056 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0021 U	0.0017 U	0.0027 U	0.002 U	0.0018 U	0.0025 R	0.0026 U	0.0022 U	0.004 U	0.002 U	0.0013 U
Acetone	6100	67000	0.29	mg/kg	0.014	0.0082	0.03	0.011	0.014	0.022 J-	0.043	0.0048 J	0.087	0.019	0.033
Benzene	1.2	5.1	0.00023	mg/kg	0.00019 U	0.0008	0.0019	0.00062 J	0.00027 J	0.00023 R	0.00037 J	0.0002 U	0.00036 U	0.00027 J	0.0002 J
Bromoform	19	86	0.00087	mg/kg	0.00012 U	0.0001 U	0.00016 U	0.00012 U	0.0001 U	0.00015 R	0.00015 U	0.00013 U	0.00023 U	0.00012 U	0.000078 U
Bromomethane	0.68	3	0.00019	mg/kg	0.0003 U	0.00025 U	0.00039 U	0.00029 U	0.00026 U	0.00036 R	0.00037 U	0.00032 U	0.00057 U	0.00029 U	0.00019 U
Carbon disulfide	77	350	0.024	mg/kg	0.0004 U	0.00033 U	0.00052 U	0.0004 U	0.0018	0.00049 R	0.0014	0.00043 U	0.0018	0.00044 J	0.00051 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.0004 U	0.00033 U	0.00052 U	0.0004 U	0.00034 U	0.00049 R	0.0005 U	0.00043 U	0.00077 U	0.00038 U	0.00026 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00013 U	0.00011 U	0.00017 U	0.00013 U	0.00011 U	0.00016 R	0.00016 U	0.00014 U	0.00025 U	0.00013 U	0.000084 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00016 U	0.00013 U	0.00021 U	0.00016 U	0.00014 U	0.00019 R	0.0002 U	0.00017 U	0.0003 U	0.00015 U	0.0001 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00014 U	0.00012 U	0.00018 U	0.00014 U	0.00012 U	0.00017 R	0.00017 U	0.00015 U	0.00027 U	0.00013 U	0.00009 U
Chloroethane	1400	5700	0.59	mg/kg	0.00033 U	0.00027 U	0.00043 U	0.00032 U	0.00028 U	0.0004 R	0.00041 U	0.00035 U	0.00063 U	0.00031 U	0.00021 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.0002 U	0.00016 U	0.00026 U	0.00019 U	0.00017 U	0.00024 R	0.00024 U	0.00021 U	0.00038 U	0.00019 U	0.00013 U
Chloromethane	11	46	0.0049	mg/kg	0.00036 U	0.0003 U	0.00046 U	0.00035 U	0.0003 U	0.00043 R	0.00044 U	0.00038 U	0.00068 U	0.00034 U	0.00023 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00021 U	0.00017 U	0.00027 U	0.0002 U	0.00018 U	0.00025 R	0.00026 U	0.00022 U	0.00039 U	0.0002 U	0.00013 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00014 U	0.00012 U	0.00018 U	0.00014 U	0.00012 U	0.00017 R	0.00017 U	0.00015 U	0.00027 U	0.00013 U	0.00009 U
Cyclohexane	650	2700	1.3	mg/kg	0.00043 U	0.0019	0.004 J+	0.00095 J+	0.00037 U	0.00052 R	0.00054 U	0.00046 U	0.00082 U	0.00041 U	0.00028 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00036 U	0.0003 U	0.00046 U	0.00035 U	0.0003 U	0.00043 R	0.00044 U	0.00038 U	0.00068 U	0.00034 U	0.00023 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.0003 U	0.00025 U	0.00039 U	0.00029 U	0.00026 U	0.00036 R	0.00037 U	0.00032 U	0.00057 U	0.00029 U	0.00019 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00017 U	0.00099	0.0011 J	0.00017 J	0.00014 U	0.0002 R	0.00023 J	0.00018 U	0.00032 U	0.00017 J	0.00012 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.000093 U	0.00015 U	0.00011 U	0.000096 U	0.00014 R	0.00014 U	0.00012 U	0.00021 U	0.00011 U	0.000072 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00016 U	0.00015 J	0.00021 U	0.00016 U	0.00014 U	0.00019 R	0.0002 U	0.00017 U	0.0003 U	0.00015 U	0.0001 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00084 U	0.0007 U	0.0011 U	0.00083 U	0.00072 U	0.001 R	0.001 U	0.0075	0.0081 J	0.00081 U	0.0089
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00016 U	0.00013 U	0.00021 U	0.00016 U	0.00014 U	0.00019 R	0.0002 U	0.00017 U	0.0003 U	0.00015 U	0.0001 U
Methylcyclohexane	--	--	--	mg/kg	0.00052 J	0.0037	0.006 J+	0.0013 J+	0.0004 U	0.00057 R	0.00058 U	0.0005 U	0.0009 U	0.00083 J	0.0003 U
Methylene Chloride	35	320	0.0027	mg/kg	0.0003 U	0.00025 U	0.00039 U	0.00029 U	0.00026 U	0.003 J-	0.00037 U	0.00032 U	0.00057 U	0.00029 U	0.00019 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00038 J	0.0031	0.0026	0.00038 J	0.000088 U	0.00012 R	0.00057 J	0.00011 U	0.0002 U	0.00054 J	0.00039 J
o-Xylene	65	280	0.019	mg/kg	0.00015 U	0.001	0.00091 J	0.00015 U	0.00013 U	0.00018 R	0.00019 J	0.00016 U	0.00029 U	0.00018 J	0.00011 J
Styrene	600	3500	0.13	mg/kg	0.00014 U	0.00012 U	0.00018 U	0.00014 U	0.00012 U	0.00017 R	0.00017 U	0.00015 U	0.00027 U	0.00013 U	0.00009 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00026 U	0.00022 U	0.00034 U	0.00026 U	0.00022 U	0.00032 R	0.00033 U	0.00028 U	0.0005 U	0.00025 U	0.00017 U
Toluene	490	4700	0.076	mg/kg	0.00069 J	0.0044	0.0051	0.001	0.00044 J	0.00022 R	0.001 J	0.00019 U	0.00034 U	0.00088 J	0.00068
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00037 U	0.0003 U	0.00048 U	0.00036 U	0.00031 U	0.00044 R	0.00045 U	0.00039 U	0.0007 U	0.00035 U	0.00023 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000094 U	0.000078 U	0.00012 U	0.000092 U	0.00008 U	0.00011 R	0.00012 U	0.0001 U	0.00018 U	0.00009 U	0.00006 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00024 U	0.0002 U	0.00032 U	0.00024 U	0.00021 U	0.0003 R	0.0003 U	0.00026 U	0.00047 U	0.00023 U	0.00016 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00032 U	0.00026 U	0.00041 U	0.00031 U	0.00027 U	0.00039 R	0.0004 U	0.00034 U	0.00061 U	0.0003 U	0.0002 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00037 U	0.0003 U	0.00048 U	0.00036 U	0.00031 U	0.00044 R	0.00045 U	0.00039 U	0.0007 U	0.00035 U	0.00023 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-110	CFSB-113	CFSB-113	CFSB-114	CFSB-114	CFSB-115	CFSB-115	CFSB-116	CFSB-116	CFSB-118	CFSB-118
					Sample Date:	7/14/2016	8/31/2016	8/31/2016	7/12/2016	7/12/2016	8/31/2016	8/31/2016	7/22/2016	7/22/2016	7/21/2016	7/21/2016
					Sample Depth (ft-bls):	10 - 12	0.5 - 2	2 - 4	0.5 - 2	10 - 12	0.5 - 2	2 - 4	10 - 12	0.5 - 2	10 - 12	0.5 - 2
					Sample Designation:	CFSB-110-SO-10-12	CFSB-113-SO-0.5-2	CFSB-113-SO-2-4	CFSB-114-SO-0.5-2	CFSB-114-SO-10-12	CFSB-115-SO-0.5-2	CFSB-115-SO-2-4	CFSB-116-SO-10-12	CFSB-116-SO-0.5-2	CFSB-118-SO-10-12	CFSB-118-SO-0.5-2
1,1,1-Trichloroethane	810	3600	0.28	mg/kg		0.00023 U	0.00035 U	0.00034 U	0.00041 U	0.00027 U	0.00037 U	0.00033 U	0.0003 U	0.00045 U	0.00044 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg		0.0001 U	0.00016 U	0.00015 U	0.00018 U	0.00012 U	0.00016 U	0.00015 U	0.00013 U	0.0002 U	0.0002 U	0.00018 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg		0.00026 U	0.00041 U	0.00039 U	0.00047 U	0.00032 U	0.00043 U	0.00039 U	0.00035 U	0.00052 U	0.00051 UJ	0.00046 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg		0.00017 U	0.00026 U	0.00025 U	0.0003 U	0.0002 U	0.00027 U	0.00025 U	0.00022 U	0.00033 U	0.00032 U	0.00029 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg		0.0002 U	0.00032 U	0.0003 U	0.00037 U	0.00024 U	0.00033 U	0.0003 U	0.00027 U	0.00041 U	0.00039 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg		0.00025 U	0.00038 U	0.00037 U	0.00044 U	0.00029 U	0.0004 U	0.00036 U	0.00032 U	0.00049 U	0.00047 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg		0.000066 U	0.0001 U	0.000098 U	0.00012 U	0.000079 U	0.00011 U	0.000097 U	0.000087 U	0.00013 U	0.00013 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg		0.00019 U	0.0003 U	0.00029 U	0.00035 U	0.00023 U	0.00031 U	0.00028 U	0.00025 U	0.00038 U	0.00037 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg		0.00028 U	0.00044 U	0.00042 U	0.00051 U	0.00034 U	0.00045 U	0.00041 U	0.00037 UJ	0.00056 UJ	0.00054 U	0.00049 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg		0.000084 U	0.00013 U	0.00013 U	0.00015 U	0.0001 U	0.00014 U	0.00012 U	0.00011 U	0.00017 U	0.00016 U	0.00015 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg		0.000066 U	0.0001 U	0.000098 U	0.00012 U	0.000079 U	0.00011 U	0.000097 U	0.000087 U	0.00013 U	0.00013 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg		0.0001 U	0.00016 U	0.00015 U	0.00018 U	0.00012 U	0.00016 U	0.00015 U	0.00013 U	0.0002 U	0.0002 U	0.00018 U
1,3-Dichlorobenzene	--	--	--	mg/kg		0.000072 U	0.00011 U	0.00011 U	0.00013 U	0.000086 U	0.00012 U	0.00011 U	0.000095 U	0.00014 U	0.00014 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg		0.000078 U	0.00012 U	0.00012 U	0.00014 U	0.000093 U	0.00013 U	0.00011 U	0.0001 U	0.00016 U	0.00015 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg		0.00046 U	0.0025 J-	0.0024 J-	0.00083 U	0.00055 U	0.0012 J-	0.0015 J-	0.00061 U	0.00092 U	0.0012 J	0.0008 U
2-Hexanone	20	130	0.00088	mg/kg		0.00056 U	0.00087 UJ	0.00084 UJ	0.001 U	0.00076 J	0.00091 UJ	0.00083 UJ	0.00074 U	0.0011 U	0.0011 U	0.00097 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg		0.0013 U	0.0021 UJ	0.002 UJ	0.0024 U	0.0016 U	0.0021 UJ	0.002 UJ	0.0018 U	0.0026 U	0.0026 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg		0.0035	0.022	0.018	0.017 J+	0.0095 J+	0.011	0.01	0.013	0.012	0.0095	0.011
Benzene	1.2	5.1	0.00023	mg/kg		0.00019 J	0.00023 J	0.00042 J	0.00031 J	0.00018 J	0.00027 J	0.00023 J	0.00061 J	0.00047 J	0.00023 U	0.00024 J
Bromoform	19	86	0.00087	mg/kg		0.000078 U	0.00012 U	0.00012 U	0.00014 U	0.000093 U	0.00013 U	0.00011 U	0.0001 U	0.00016 U	0.00015 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg		0.00019 U	0.0003 U	0.00029 U	0.00035 U	0.00023 U	0.00031 U	0.00028 U	0.00025 U	0.00038 U	0.00037 UJ	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg		0.0024	0.0058	0.0029	0.00046 U	0.00031 U	0.0034	0.0028	0.0004 J	0.00075 J	0.0005 U	0.0077
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg		0.00026 U	0.0004 UJ	0.00038 UJ	0.00046 U	0.00031 U	0.00042 UJ	0.00038 UJ	0.00034 U	0.00051 U	0.0005 U	0.00045 U
Chlorobenzene	28	130	0.0053	mg/kg		0.000084 U	0.00013 U	0.00013 U	0.00015 U	0.0001 U	0.00014 U	0.00012 U	0.00011 U	0.00017 U	0.00016 U	0.00015 U
Chlorobromomethane	15	63	0.0021	mg/kg		0.0001 U	0.00016 U	0.00015 U	0.00018 U	0.00012 U	0.00016 U	0.00015 U	0.00013 U	0.0002 U	0.0002 U	0.00018 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg		0.00009 U	0.00014 U	0.00013 U	0.00016 U	0.00011 U	0.00014 U	0.00013 U	0.00012 U	0.00018 U	0.00017 U	0.00016 U
Chloroethane	1400	5700	0.59	mg/kg		0.00021 U	0.00032 U	0.00031 U	0.00038 U	0.00025 U	0.00034 U	0.00031 U	0.00028 U	0.00042 U	0.0004 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg		0.00013 U	0.00019 U	0.00019 U	0.00023 U	0.00015 U	0.0002 U	0.00018 U	0.00017 U	0.00025 U	0.00024 U	0.00022 U
Chloromethane	11	46	0.0049	mg/kg		0.00023 U	0.00035 U	0.00034 U	0.00041 U	0.00027 U	0.00037 U	0.00033 U	0.0003 U	0.00045 U	0.00044 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg		0.00013 U	0.0002 U	0.0002 U	0.00024 U	0.00016 U	0.00021 U	0.00019 U	0.00017 U	0.00026 U	0.00025 U	0.00023 U
cis-1,3-Dichloropropene	--	--	--	mg/kg		0.00009 U	0.00014 U	0.00013 U	0.00016 U	0.00011 U	0.00014 U	0.00013 U	0.00012 U	0.00018 U	0.00017 U	0.00016 U
Cyclohexane	650	2700	1.3	mg/kg		0.00065	0.00073 J	0.00093	0.0005 U	0.00033 U	0.00076 J	0.00074 J	0.00036 U	0.00055 U	0.00053 U	0.00048 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg		0.00023 U	0.00035 U	0.00034 U	0.00041 U	0.00027 U	0.00037 U	0.00033 U	0.0003 U	0.00045 U	0.00044 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg		0.00019 U	0.0003 U	0.00029 U	0.00035 U	0.00023 U	0.00031 U	0.00028 U	0.00025 U	0.00038 U	0.00037 UJ	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg		0.00012 J	0.00018 J	0.00037 J	0.0004 J	0.00026 J	0.00017 U	0.00016 U	0.00036 J	0.00021 U	0.00021 U	0.00019 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg		0.000072 U	0.00011 U	0.00011 U	0.00013 U	0.000086 U	0.00012 U	0.00011 U	0.000095 U	0.00014 U	0.00014 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg		0.0001 U	0.00016 U	0.00015 U	0.00018 U	0.00012 U	0.00016 U	0.00015 U	0.00013 U	0.0002 U	0.0002 U	0.00018 U
Methyl acetate	7800	120000	0.41	mg/kg		0.00054 U	0.0043 J	0.0008 U	0.00097 U	0.00065 U	0.00087 U	0.00079 U	0.00071 U	0.0011 U	0.001 U	0.00093 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg		0.0001 U	0.00016 U	0.00015 U	0.00018 U	0.00012 U	0.00016 U	0.00015 U	0.00013 U	0.0002 U	0.0002 U	0.00018 U
Methylcyclohexane	--	--	--	mg/kg		0.00069	0.00086 J	0.0013	0.00058 J	0.00036 U	0.00093 J	0.00089	0.0015	0.0006 U	0.00071 J	0.00056 J+
Methylene Chloride	35	320	0.0027	mg/kg		0.00019 U	0.0003 U	0.00029 U	0.00035 U	0.00023 U	0.00031 U	0.00028 U	0.00025 U	0.00038 U	0.00037 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg		0.00028 J	0.00067 J	0.00083 J	0.0013	0.00073	0.0004 J	0.00037 J	0.00067 J	0.00013 U	0.00043 J	0.00035 J
o-Xylene	65	280	0.019	mg/kg		0.0001 J	0.00019 J	0.00031 J	0.00044 J	0.00026 J	0.00015 U	0.00014 U	0.00024 J	0.00019 U	0.00018 U	0.00017 U
Styrene	600	3500	0.13	mg/kg		0.00009 U	0.00014 U	0.00013 U	0.00016 U	0.00011 U	0.00014 U	0.00013 U	0.00012 U	0.00018 U	0.00017 U	0.00016 U
Tetrachloroethene	8.1	39	0.0018	mg/kg		0.00017 U	0.00026 U	0.00025 U	0.0003 U	0.0002 U	0.00027 U	0.00025 U	0.00022 U	0.00033 U	0.00032 U	0.00029 U
Toluene	490	4700	0.076	mg/kg		0.00097	0.00089 J	0.0013	0.0014	0.001	0.00081 J	0.00067 J	0.0014	0.00069 J	0.00063 J	0.00061 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg		0.00023 U	0.00036 U	0.00035 U	0.00042 U	0.00028 U	0.00038 U	0.00034 U	0.00031 U	0.00047 U	0.00045 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg		0.00006 U	0.000093 U	0.000089 U	0.00011 U	0.000072 U	0.000097 U	0.000088 U	0.000079 U	0.00012 U	0.00012 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg		0.00016 U	0.00024 U	0.00023 U	0.00028 U	0.00019 U	0.00025 U	0.00023 U	0.00021 U	0.00031 U	0.0003 U	0.00027 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg		0.0002 U	0.00032 U	0.0003 U	0.00037 U	0.00024 U	0.00033 U	0.0003 U	0.00027 U	0.00041 U	0.00039 UJ	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg		0.00023 U	0.00036 U	0.00035 U	0.00042 U	0.00028 U	0.00038 U	0.00034 U	0.00031 U	0.00047 U	0.00045 U	0.0004 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-119	CFSB-119	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-124
				Sample Date:	7/12/2016	7/12/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
				Sample Designation:	CFSB-119-SO-0.5-2	CFSB-119-SO-10-12	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12	CFSB-124-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00046 U	0.00032 U	0.00043 U	0.00039 U	0.00039 UJ	0.00036 U	0.00055 U	0.00035 U	0.0006 U	0.00041 U	0.00054 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.0002 U	0.00014 U	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00053 UJ	0.00037 U	0.0005 U	0.00045 U	0.00045 UJ	0.00042 U	0.00063 U	0.00041 U	0.0007 U	0.00048 U	0.00063 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00034 U	0.00023 U	0.00032 U	0.00028 U	0.00028 UJ	0.00027 U	0.0004 U	0.00026 U	0.00044 U	0.00031 U	0.0004 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00041 U	0.00028 U	0.00039 U	0.00035 U	0.00035 UJ	0.00033 U	0.00049 U	0.00031 U	0.00054 U	0.00037 U	0.00049 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00049 U	0.00034 U	0.00047 U	0.00042 U	0.00042 UJ	0.00039 U	0.00059 U	0.00038 U	0.00065 U	0.00045 U	0.00059 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00013 U	0.000092 U	0.00013 U	0.00011 U	0.00011 UJ	0.00011 U	0.00016 U	0.0001 U	0.00017 U	0.00012 U	0.00016 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00038 U	0.00027 U	0.00037 U	0.00032 U	0.00033 UJ	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00056 U	0.00039 U	0.00054 U	0.00048 U	0.00048 UJ	0.00045 U	0.00068 U	0.00043 U	0.00074 U	0.00051 U	0.00067 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00017 U	0.00012 U	0.00016 U	0.00014 U	0.00014 UJ	0.00013 U	0.0002 U	0.00013 U	0.00022 U	0.00015 U	0.0002 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00013 U	0.000092 U	0.00013 U	0.00011 U	0.00011 UJ	0.00011 U	0.00016 U	0.0001 U	0.00017 U	0.00012 U	0.00016 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.0002 U	0.00014 U	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00014 U	0.0001 U	0.00014 U	0.00012 U	0.00012 UJ	0.00011 U	0.00017 U	0.00011 U	0.00019 U	0.00013 U	0.00017 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00016 U	0.00011 U	0.00015 U	0.00013 U	0.00013 UJ	0.00012 U	0.00019 U	0.00012 U	0.00021 U	0.00014 U	0.00019 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.01	0.0034 J	0.00088 U	0.00078 U	0.00078 UJ	0.00074 U	0.0011 U	0.00071 U	0.0012 U	0.00084 U	0.0011 U
2-Hexanone	20	130	0.00088	mg/kg	0.0011 U	0.00078 U	0.0011 U	0.00095 U	0.00095 UJ	0.0009 U	0.0014 U	0.00087 U	0.0015 U	0.001 U	0.0013 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0027 U	0.0018 U	0.0025 U	0.0023 U	0.0023 UJ	0.0021 U	0.0032 U	0.0021 U	0.0035 U	0.0024 U	0.0032 U
Acetone	6100	67000	0.29	mg/kg	0.16	0.033	0.049	0.0082	0.041	0.0066	0.012	0.0057	0.068	0.0087	0.093
Benzene	1.2	5.1	0.00023	mg/kg	0.0022	0.00075 J	0.001 J	0.00066 J	0.0002 UJ	0.00091 J	0.00029 U	0.00022 J	0.0015 J	0.00022 U	0.00082 J
Bromoform	19	86	0.00087	mg/kg	0.00016 U	0.00011 U	0.00015 U	0.00013 U	0.00013 U	0.00012 U	0.00019 U	0.00012 U	0.00021 U	0.00014 U	0.00019 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00038 UJ	0.00027 U	0.00037 U	0.00032 U	0.00033 U	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U
Carbon disulfide	77	350	0.024	mg/kg	0.00099 J-	0.00036 U	0.00049 U	0.00044 U	0.00044 UJ	0.00041 U	0.00062 U	0.0004 U	0.00068 U	0.00047 U	0.00062 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00052 U	0.00036 U	0.00049 U	0.00044 U	0.00044 UJ	0.00041 U	0.00062 U	0.0004 U	0.00068 U	0.00047 U	0.00062 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00017 U	0.00012 U	0.00016 U	0.00014 U	0.00014 UJ	0.00013 U	0.0002 U	0.00013 U	0.00022 U	0.00015 U	0.0002 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.0002 U	0.00014 U	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00018 U	0.00012 U	0.00017 U	0.00015 U	0.00015 UJ	0.00014 U	0.00022 U	0.00014 U	0.00024 U	0.00016 U	0.00021 U
Chloroethane	1400	5700	0.59	mg/kg	0.00042 U	0.00029 U	0.0004 U	0.00036 U	0.00036 U	0.00034 U	0.0005 U	0.00032 U	0.00055 U	0.00038 U	0.0005 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00025 U	0.00017 U	0.00024 U	0.00021 U	0.00021 UJ	0.0002 U	0.0003 U	0.00019 U	0.00033 U	0.00023 U	0.0003 U
Chloromethane	11	46	0.0049	mg/kg	0.00046 U	0.00032 U	0.00043 U	0.00039 U	0.00039 U	0.00036 U	0.00055 U	0.00035 U	0.0006 U	0.00041 U	0.00054 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00026 U	0.00018 U	0.00025 U	0.00022 U	0.00022 UJ	0.00021 U	0.00032 U	0.0002 U	0.00035 U	0.00024 U	0.00031 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00018 U	0.00012 U	0.00017 U	0.00015 U	0.00015 UJ	0.00014 U	0.00022 U	0.00014 U	0.00024 U	0.00016 U	0.00021 U
Cyclohexane	650	2700	1.3	mg/kg	0.0032 J-	0.0015	0.00053 U	0.0018	0.00047 UJ	0.00044 U	0.00066 U	0.00093	0.00073 U	0.0005 U	0.00066 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00046 U	0.00032 U	0.00043 U	0.00039 U	0.00039 UJ	0.00036 U	0.00055 U	0.00035 U	0.0006 U	0.00041 U	0.00054 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00038 U	0.00027 U	0.00037 U	0.00032 U	0.00033 UJ	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.0012	0.00032 J	0.00021 U	0.00067 J	0.00018 UJ	0.00098	0.00026 U	0.00025 J	0.00028 U	0.00021 J	0.00026 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00014 U	0.0001 U	0.00014 U	0.00012 U	0.00012 UJ	0.00011 U	0.00017 U	0.00011 U	0.00019 U	0.00013 U	0.00017 U
Isopropylbenzene	190	990	0.074	mg/kg	0.0002 U	0.00014 U	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U
Methyl acetate	7800	120000	0.41	mg/kg	0.36	0.00075 U	0.001 U	0.00091 U	0.0024 J	0.00086 U	0.0013 U	0.00083 U	0.0039 J	0.00098 U	0.035
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.0002 U	0.00014 U	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U
Methylcyclohexane	--	--	--	mg/kg	0.0056	0.0024	0.00057 U	0.0035	0.00051 UJ	0.0055	0.00072 U	0.0011	0.00079 U	0.00075 J	0.00072 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00038 U	0.00027 U	0.00037 U	0.00032 U	0.00033 UJ	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.0033	0.00092	0.00013 U	0.0022	0.00011 UJ	0.0032	0.00016 U	0.0008 J	0.00017 U	0.00036 J	0.00016 U
o-Xylene	65	280	0.019	mg/kg	0.0011 J	0.00028 J	0.00018 U	0.00072 J	0.00016 UJ	0.00093 J	0.00023 U	0.00025 J	0.00025 U	0.00017 U	0.00023 U
Styrene	600	3500	0.13	mg/kg	0.00018 U	0.00012 U	0.00017 U	0.00015 U	0.00015 UJ	0.00014 U	0.00022 U	0.00014 U	0.00024 U	0.00016 U	0.00021 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00034 U	0.00023 U	0.00032 U	0.00028 U	0.00028 UJ	0.00027 U	0.0004 U	0.00026 U	0.00044 U	0.00031 U	0.0004 U
Toluene	490	4700	0.076	mg/kg	0.0069	0.002	0.00024 J	0.0031	0.00019 UJ	0.0051	0.00027 U	0.001	0.0003 U	0.00068 J	0.00027 U
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00047 U	0.00032 U	0.00045 U	0.0004 U	0.0004 UJ	0.00037 U	0.00056 U	0.00036 U	0.00062 U	0.00043 U	0.00056 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00012 U	0.000083 U	0.00011 U	0.0001 U	0.0001 UJ	0.000096 U	0.00014 U	0.000092 U	0.00016 U	0.00011 U	0.00014 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00031 U	0.00022 U	0.0003 U	0.00026 U	0.00026 UJ	0.00025 U	0.00037 U	0.00024 U	0.00041 U	0.00028 U	0.00037 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00041 UJ	0.00028 U	0.00039 U	0.00035 U	0.00035 U	0.00033 U	0.00049 U	0.00031 U	0.00054 U	0.00037 U	0.00049 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00047 U	0.00032 U	0.00045 U	0.0004 U	0.0004 U	0.00037 U	0.00056 U	0.00036 U	0.00062 U	0.00043 U	0.00056 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-124	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-127	CFSB-127	CFSB-128	CFSB-128	CFSB-129	CFSB-129
			Sample Date:	5/19/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
			Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-124-SO-10-12	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12	CFSB-128-SO-0.5-2.0	CFSB-128-SO-10-12	CFSB-129-SO-0.5-2.0	CFSB-129-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00033 U	0.00039 U	0.00034 U	0.00056 U	0.00039 U	0.00049 U	0.00039 U	0.00031 U	0.00035 U	0.00033 U	0.00038 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00017 U	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00039 U	0.00045 U	0.0004 U	0.00065 U	0.00045 U	0.00056 U	0.00045 U	0.00036 U	0.00041 U	0.00038 U	0.00044 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00025 U	0.00029 U	0.00025 U	0.00041 U	0.00029 U	0.00036 U	0.00028 U	0.00023 U	0.00026 U	0.00024 U	0.00028 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.0003 U	0.00035 U	0.00031 U	0.0005 U	0.00035 U	0.00043 U	0.00035 U	0.00028 U	0.00031 U	0.00029 U	0.00034 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00036 U	0.00042 U	0.00037 U	0.0006 U	0.00042 U	0.00052 U	0.00042 U	0.00033 U	0.00038 U	0.00035 U	0.00041 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000096 U	0.00011 U	0.000099 U	0.00016 U	0.00011 U	0.00014 U	0.00011 U	0.00009 U	0.0001 U	0.000094 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00028 U	0.00033 U	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U	0.00026 U	0.0003 U	0.00027 U	0.00032 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00041 U	0.00048 U	0.00043 U	0.00069 U	0.00049 U	0.0006 U	0.00048 U	0.00038 U	0.00043 U	0.0004 U	0.00046 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00012 U	0.00014 U	0.00013 U	0.00021 U	0.00014 U	0.00018 U	0.00014 U	0.00011 U	0.00013 U	0.00012 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000096 U	0.00011 U	0.000099 U	0.00016 U	0.00011 U	0.00014 U	0.00011 U	0.00009 U	0.0001 U	0.000094 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00017 U	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.00012 U	0.00011 U	0.00018 U	0.00012 U	0.00015 U	0.00012 U	0.000098 U	0.00011 U	0.0001 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00011 U	0.00013 U	0.00012 U	0.00019 U	0.00013 U	0.00017 U	0.00013 U	0.00011 U	0.00012 U	0.00011 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00067 U	0.00079 U	0.0007 U	0.0011 U	0.0008 U	0.00098 U	0.00078 U	0.0025 J	0.00071 U	0.00066 U	0.00076 U
2-Hexanone	20	130	0.00088	mg/kg	0.00082 U	0.00097 U	0.00085 U	0.0014 U	0.00097 U	0.0012 U	0.00096 U	0.00077 U	0.00087 U	0.0008 U	0.00093 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0019 U	0.0023 U	0.002 U	0.0033 U	0.0023 U	0.0028 U	0.0023 U	0.0018 U	0.0021 U	0.0019 U	0.0022 U
Acetone	6100	67000	0.29	mg/kg	0.013	0.02	0.017	0.05	0.022	0.042	0.022	0.043	0.0092	0.021	0.0058
Benzene	1.2	5.1	0.00023	mg/kg	0.00019 J	0.0013	0.00034 J	0.00035 J	0.00024 J	0.00029 J	0.0004 J	0.00041 J	0.00072 J	0.00031 J	0.00021 J
Bromoform	19	86	0.00087	mg/kg	0.00011 U	0.00013 U	0.00012 U	0.00019 U	0.00013 U	0.00017 U	0.00013 U	0.00011 U	0.00012 U	0.00011 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00028 U	0.00033 U	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U	0.00026 U	0.0003 U	0.00027 U	0.00032 U
Carbon disulfide	77	350	0.024	mg/kg	0.00039 J	0.00044 U	0.0005 J	0.00063 U	0.00044 U	0.00055 U	0.00079 J	0.00075 J	0.00072 J	0.0006 J	0.00043 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00038 U	0.00044 U	0.00039 U	0.00063 U	0.00044 U	0.00055 U	0.00044 U	0.00035 U	0.0004 U	0.00037 U	0.00043 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00012 U	0.00014 U	0.00013 U	0.00021 U	0.00014 U	0.00018 U	0.00014 U	0.00011 U	0.00013 U	0.00012 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00017 U	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00015 U	0.00014 U	0.00022 U	0.00016 U	0.00019 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00031 U	0.00036 U	0.00032 U	0.00051 U	0.00036 U	0.00045 U	0.00036 U	0.00029 U	0.00032 U	0.0003 U	0.00035 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00018 U	0.00022 U	0.00019 U	0.00031 U	0.00022 U	0.00027 U	0.00021 U	0.00017 U	0.00019 U	0.00018 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.00033 U	0.00039 U	0.00034 U	0.00056 U	0.00039 U	0.00049 U	0.00039 U	0.00031 U	0.00035 U	0.00033 U	0.00038 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00019 U	0.00023 U	0.0002 U	0.00032 U	0.00023 U	0.00028 U	0.00022 U	0.00018 U	0.0002 U	0.00019 U	0.00022 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00015 U	0.00014 U	0.00022 U	0.00016 U	0.00019 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.0004 U	0.001	0.00049 J	0.00068 U	0.00048 U	0.00059 U	0.00047 J	0.00038 U	0.0021	0.00067 J	0.00045 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00033 U	0.00039 U	0.00034 U	0.00056 U	0.00039 U	0.00049 U	0.00039 U	0.00031 U	0.00035 U	0.00033 U	0.00038 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00028 U	0.00033 U	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U	0.00026 U	0.0003 U	0.00027 U	0.00032 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00016 U	0.00018 U	0.00016 U	0.00026 U	0.00019 U	0.00023 U	0.00018 U	0.00015 U	0.00087 J	0.00017 J	0.00018 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.00012 U	0.00011 U	0.00018 U	0.00012 U	0.00015 U	0.00012 U	0.000098 U	0.00011 U	0.0001 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00017 U	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.0096	0.00092 U	0.00081 U	0.002 J	0.0078	0.011	0.00092 U	0.00073 U	0.00083 U	0.00077 U	0.00089 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00017 U	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U	0.00014 U	0.00016 U	0.00015 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.00044 U	0.0015	0.00091	0.00073 U	0.00052 U	0.00064 U	0.0007 J	0.00041 U	0.0035	0.0013	0.00073 J
Methylene Chloride	35	320	0.0027	mg/kg	0.00028 U	0.00033 U	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U	0.00026 U	0.0003 U	0.00027 U	0.00059 J
m-Xylene & p-Xylene	56	240	--	mg/kg	0.000096 U	0.00051 J	0.000099 U	0.00016 U	0.00011 U	0.00014 U	0.00011 U	0.000091 J	0.0034	0.0005 J	0.00061 J
o-Xylene	65	280	0.019	mg/kg	0.00014 U	0.00016 U	0.00014 U	0.00023 U	0.00017 U	0.0002 U	0.00016 U	0.00013 U	0.0012	0.00015 J	0.00023 J
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00015 U	0.00014 U	0.00022 U	0.00016 U	0.00019 U	0.00015 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00025 U	0.00029 U	0.00025 U	0.00041 U	0.00029 U	0.00036 U	0.00028 U	0.00023 U	0.00026 U	0.00024 U	0.00028 U
Toluene	490	4700	0.076	mg/kg	0.00043 J	0.0014	0.00095	0.00028 U	0.00033 J	0.00024 U	0.00053 J	0.0004 J	0.0045	0.0011	0.00096 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00034 U	0.0004 U	0.00035 U	0.00057 U	0.0004 U	0.0005 U	0.0004 U	0.00032 U	0.00036 U	0.00033 U	0.00039 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.000088 U	0.0001 U	0.00009 U	0.00015 U	0.0001 U	0.00013 U	0.0001 U	0.000082 U	0.000092 U	0.000086 U	0.000099 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00023 U	0.00027 U	0.00024 U	0.00038 U	0.00027 U	0.00033 U	0.00026 U	0.00021 U	0.00024 U	0.00022 U	0.00026 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.0003 U	0.00035 U	0.00031 U	0.0005 U	0.00035 U	0.00043 U	0.00035 U	0.00028 U	0.00031 U	0.00029 U	0.00034 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00034 U	0.0004 U	0.00035 U	0.00057 U	0.0004 U	0.0005 U	0.0004 U	0.00032 U	0.00036 U	0.00033 U	0.00039 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and DEQ Review

Table L1. Volatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-130	CFSB-130	CFSB-131	CFSB-131	CFSB-131	CFSB-131	CFSB-132	CFSB-132	CFSB-133	CFSB-133
			Sample Date:	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	18 - 20	22 - 23	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-130-SO-0.5-2	CFSB-130-SO-10-12	CFSB-131-SO-0.5-2	CFSB-131-SO-10-12	CFSB-131-SO-18-20	CFSB-131-SO-22-23	CFSB-132-SO-0.5-2	CFSB-132-SO-10-12	CFSB-133-SO-0.5-2	CFSB-133-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00034 U	0.00028 U	0.00037 U	0.0003 U	0.022 U	0.00033 U	0.00038 U	0.0011 U	0.00037 U	0.00029 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.015 U	0.00015 U	0.00017 U	0.00051 U	0.00016 U	0.00013 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00039 U	0.00033 U	0.00043 U	0.00035 U	0.027 U	0.00038 U	0.00044 U	0.0013 U	0.00042 U	0.00033 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00025 U	0.00021 U	0.00028 U	0.00022 U	0.0064 U	0.00024 U	0.00028 U	0.00083 U	0.00027 U	0.00021 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.0003 U	0.00025 U	0.00034 U	0.00027 U	0.019 U	0.0003 U	0.00034 U	0.001 U	0.00033 U	0.00026 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00037 U	0.00031 U	0.0004 U	0.00032 U	0.027 U	0.00036 U	0.00041 U	0.0012 U	0.0004 U	0.00031 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.000099 U	0.000082 U	0.00011 U	0.000087 U	0.028 U	0.000096 U	0.00011 U	0.00033 U	0.00011 U	0.000083 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00029 U	0.00024 U	0.00032 U	0.00025 U	0.022 U	0.00028 U	0.00032 U	0.00095 U	0.00031 U	0.00024 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00042 U	0.00035 U	0.00046 U	0.00037 U	0.018 U	0.00041 U	0.00047 U	0.0014 U	0.00045 U	0.00035 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00013 U	0.0001 U	0.00014 U	0.00011 U	0.018 U	0.00012 U	0.00014 U	0.00042 U	0.00014 U	0.00011 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.000099 U	0.000082 U	0.00011 U	0.000087 U	0.02 U	0.000096 U	0.00011 U	0.00033 U	0.00011 U	0.000083 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.014 U	0.00015 U	0.00017 U	0.00051 U	0.00016 U	0.00013 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.000089 U	0.00012 U	0.000094 U	0.027 U	0.0001 U	0.00012 U	0.00036 U	0.00012 U	0.00009 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00012 U	0.000097 U	0.00013 U	0.0001 U	0.027 U	0.00011 U	0.00013 U	0.00039 U	0.00013 U	0.000098 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0037 J	0.0054	0.0025 J	0.0016 J	0.18 U	0.0014 J	0.00077 U	0.0023 U	0.00074 U	0.00058 U
2-Hexanone	20	130	0.00088	mg/kg	0.00084 U	0.0007 U	0.00093 U	0.00074 U	0.058 UJ	0.00082 U	0.00094 U	0.0028 U	0.00091 U	0.00071 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.002 U	0.0017 U	0.0022 U	0.0017 U	0.051 U	0.0019 U	0.0022 U	0.0066 U	0.0021 U	0.0017 U
Acetone	6100	67000	0.29	mg/kg	0.023 J+	0.065 J+	0.023 J+	0.016 J+	0.086 U	0.015 J+	0.019	0.025	0.0094	0.0087
Benzene	1.2	5.1	0.00023	mg/kg	0.00078 J	0.00061 J	0.00035 J	0.00038 J	0.24	0.0013	0.00044 J	0.00086 J	0.00072 J	0.00015 U
Bromoform	19	86	0.00087	mg/kg	0.00012 U	0.000097 U	0.00013 U	0.0001 U	0.014 U	0.00011 U	0.00013 U	0.00039 U	0.00013 U	0.000098 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00029 U	0.00064 J	0.00032 U	0.00025 U	0.014 U	0.00028 U	0.00032 U	0.00095 U	0.00031 U	0.00024 U
Carbon disulfide	77	350	0.024	mg/kg	0.0017	0.0047	0.0017	0.00077 J	0.018 U	0.00087	0.00043 U	0.0013 U	0.00041 U	0.00032 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00039 U	0.00032 U	0.00042 U	0.00034 U	0.027 U	0.00037 U	0.00043 U	0.0013 U	0.00041 U	0.00032 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00013 U	0.0001 U	0.00014 U	0.00011 U	0.019 U	0.00012 U	0.00014 U	0.00042 U	0.00014 U	0.00011 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.024 U	0.00015 U	0.00017 U	0.00051 U	0.00016 U	0.00013 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00013 U	0.00011 U	0.00015 U	0.00012 U	0.018 U	0.00013 U	0.00015 U	0.00045 U	0.00014 U	0.00011 U
Chloroethane	1400	5700	0.59	mg/kg	0.00031 U	0.00026 U	0.00034 U	0.00028 U	0.03 U	0.0003 U	0.00035 U	0.001 U	0.00034 U	0.00026 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00019 U	0.00016 U	0.00021 U	0.00017 U	0.018 U	0.00018 U	0.00021 U	0.00062 U	0.0002 U	0.00016 U
Chloromethane	11	46	0.0049	mg/kg	0.00034 UJ	0.0025	0.00037 UJ	0.0003 UJ	0.018 UJ	0.00033 U	0.00038 U	0.0011 U	0.00037 U	0.00029 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.0002 U	0.00016 U	0.00022 U	0.00017 U	0.021 U	0.00019 U	0.00022 U	0.00065 U	0.00021 U	0.00017 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00013 U	0.00011 U	0.00015 U	0.00012 U	0.013 U	0.00013 U	0.00015 U	0.00045 U	0.00014 U	0.00011 U
Cyclohexane	650	2700	1.3	mg/kg	0.00041 U	0.00097	0.00045 U	0.00083	0.64	0.0039	0.00046 U	0.0019 J	0.00044 U	0.00035 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00034 U	0.00028 U	0.00037 U	0.0003 U	0.012 U	0.00033 U	0.00038 U	0.0011 U	0.00037 U	0.00029 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00029 U	0.00024 U	0.00032 U	0.00025 U	0.011 U	0.00028 U	0.00032 U	0.00095 U	0.00031 U	0.00024 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00036 J	0.00033 J	0.00018 U	0.00044 J	2.4	0.0018	0.00018 U	0.00054 U	0.00017 U	0.00014 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.000089 U	0.00012 U	0.000094 U	0.015 U	0.0001 U	0.00012 U	0.00036 U	0.00012 U	0.00009 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.94	0.00036 J	0.00017 U	0.00051 U	0.00016 U	0.00013 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00081 U	0.00067 U	0.00089 U	0.00071 U	0.047 U	0.00078 U	0.0028 J	0.0027 U	0.00087 U	0.00068 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00013 U	0.00017 U	0.00013 U	0.01 U	0.00015 U	0.00017 U	0.00051 U	0.00016 U	0.00013 U
Methylcyclohexane	--	--	--	mg/kg	0.00045 U	0.001	0.00049 U	0.0013	1.9 J-	0.0065	0.0005 U	0.0041	0.00048 U	0.00038 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00029 U	0.00024 U	0.00032 U	0.00025 U	0.017 U	0.00028 U	0.00032 U	0.00095 U	0.00031 U	0.00024 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00033 J	0.00097	0.00011 U	0.0015	5.3	0.0061	0.00011 U	0.0024 J	0.00011 U	0.0001 J
o-Xylene	65	280	0.019	mg/kg	0.00018 J	0.00037 J	0.00016 U	0.00072 J	4.2	0.0024	0.00016 U	0.00073 J	0.00015 U	0.00012 U
Styrene	600	3500	0.13	mg/kg	0.00013 U	0.00011 U	0.00015 U	0.00012 U	0.014 U	0.00013 U	0.00015 U	0.00045 U	0.00014 U	0.00011 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00025 U	0.00021 U	0.00028 U	0.00022 U	0.029 U	0.00024 U	0.00028 U	0.00083 U	0.00027 U	0.00021 U
Toluene	490	4700	0.076	mg/kg	0.00094	0.0015	0.00043 J	0.0015	2.3	0.007	0.00019 U	0.0031	0.00018 J	0.00014 U
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00035 U	0.00029 U	0.00038 U	0.00031 U	0.014 U	0.00034 U	0.00039 U	0.0012 U	0.00038 U	0.00029 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00009 U	0.000074 U	0.000099 U	0.000079 U	0.015 U	0.000087 U	0.000099 U	0.0003 U	0.000096 U	0.000075 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00023 U	0.00019 U	0.00026 U	0.0002 U	0.018 U	0.00023 U	0.00026 U	0.00077 U	0.00025 U	0.0002 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.0003 U	0.00025 U	0.00034 U	0.00027 U	0.012 U	0.0003 U	0.00034 U	0.001 U	0.00033 U	0.00026 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00035 U	0.00029 U	0.00038 U	0.00031 U	0.016 UJ	0.00034 U	0.00039 U	0.0012 U	0.00038 U	0.00029 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-002	CFMW-002	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a
					Sample Date:	6/13/2016	6/13/2016	6/13/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	6/2/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	23 - 28
					Sample Designation:	CFMW-002-SO-0-0.5	CFMW-002-SO-0.5-2	CFMW-002-SO-10-12	CFMW-003a-SO-0-0.5	CFMW-003a-SO-0.5-2	CFMW-003a-SO-10-12	CFMW-DUP9-SO	CFMW-003a-SO-23-28
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.03 U	0.032 U	0.03 U	0.034 UJ	0.032 U	0.031 UJ	0.034 U	0.034 UJ
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.026 U	0.028 U	0.026 U	0.03 UJ	0.028 U	0.027 UJ	0.029 U	0.029 UJ
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.094 U	0.1 U	0.093 U	0.11 UJ	0.099 U	0.096 UJ	0.11 U	0.11 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.014 U	0.015 U	0.014 U	0.017 UJ	0.015 U	0.015 UJ	0.016 U	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.033 UJ	0.035 U	0.033 U	0.038 UJ	0.035 U	0.034 UJ	0.037 U	0.037 UJ
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.035 U	0.037 U	0.035 U	0.04 UJ	0.037 U	0.036 UJ	0.039 U	0.039 UJ
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.011 U	0.0099 U	0.011 UJ	0.011 U	0.01 UJ	0.011 U	0.011 UJ
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0083 U	0.0088 U	0.0082 U	0.0095 UJ	0.0088 U	0.0085 UJ	0.0093 U	0.0093 UJ
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.077 UJ	0.082 U	0.077 U	0.088 UJ	0.082 U	0.079 UJ	0.087 U	0.087 UJ
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.27 UJ	0.28 U	0.26 U	0.3 UJ	0.28 U	0.27 UJ	0.3 U	0.3 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.015 U	0.014 U	0.016 UJ	0.015 U	0.014 UJ	0.016 U	0.016 UJ
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.019 U	0.02 U	0.019 U	0.021 UJ	0.02 U	0.019 UJ	0.021 U	0.021 UJ
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.008 U	0.0085 U	0.0079 U	0.0091 UJ	0.0084 U	0.0081 UJ	0.009 U	0.009 UJ
2-Chlorophenol	39	580	0.0089	mg/kg		0.0089 UJ	0.0095 U	0.0089 U	0.01 UJ	0.0095 U	0.0091 UJ	0.01 U	0.01 UJ
2-Methylnaphthalene	24	300	0.019	mg/kg		0.083 J	0.01 J	0.0077 U	0.0089 UJ	0.0082 U	0.0079 UJ	0.0087 U	0.0087 UJ
2-Methylphenol	320	4100	0.075	mg/kg		0.015 U	0.016 U	0.015 U	0.018 UJ	0.016 U	0.016 UJ	0.017 U	0.017 UJ
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.012 U	0.011 U	0.013 UJ	0.012 U	0.012 UJ	0.013 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg		0.012 UJ	0.013 U	0.012 U	0.014 UJ	0.012 U	0.012 UJ	0.013 U	0.013 UJ
3 & 4 Methylphenol	--	--	--	mg/kg		0.0094 U	0.01 U	0.0093 U	0.011 UJ	0.0099 U	0.0096 UJ	0.011 U	0.011 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.039 U	0.042 U	0.039 U	0.045 UJ	0.042 U	0.04 UJ	0.044 U	0.044 U
3-Nitroaniline	--	--	--	mg/kg		0.01 U	0.011 U	0.01 U	0.012 UJ	0.011 U	0.011 UJ	0.012 U	0.012 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.094 UJ	0.1 U	0.093 U	0.11 UJ	0.099 U	0.096 UJ	0.11 U	0.11 UJ
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.012 U	0.011 U	0.013 UJ	0.012 U	0.011 UJ	0.012 U	0.012 UJ
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.016 U	0.015 U	0.017 UJ	0.016 U	0.015 UJ	0.017 U	0.017 UJ
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.009 U	0.0096 U	0.009 U	0.01 UJ	0.0096 U	0.0092 UJ	0.01 U	0.01 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.01 U	0.012 UJ	0.011 U	0.011 UJ	0.012 U	0.012 UJ
4-Nitroaniline	25	110	0.0016	mg/kg		0.013 U	0.014 U	0.013 U	0.015 UJ	0.014 U	0.014 UJ	0.015 U	0.015 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.18 U	0.17 U	0.19 UJ	0.18 U	0.17 UJ	0.19 U	0.19 U
Acenaphthene	360	4500	0.55	mg/kg		0.032 J	0.009 U	0.0084 U	0.0097 UJ	0.009 U	0.0087 UJ	0.0096 U	0.0096 UJ
Acenaphthylene	--	--	--	mg/kg		0.009 U	0.0096 U	0.009 U	0.01 UJ	0.0096 U	0.0092 UJ	0.01 U	0.01 UJ
Acetophenone	780	12000	0.058	mg/kg		0.0077 U	0.0081 U	0.0076 U	0.0088 UJ	0.0081 U	0.0078 UJ	0.0086 U	0.0086 UJ
Anthracene	1800	23000	5.8	mg/kg		0.044 J	0.036 U	0.033 U	0.038 UJ	0.035 U	0.034 UJ	0.038 U	0.038 UJ
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.017 U	0.015 U	0.018 UJ	0.017 U	0.016 UJ	0.018 U	0.018 U
Benzaldehyde	170	820	0.0041	mg/kg		0.027 UJ	0.029 U	0.027 U	0.031 UJ	0.028 U	0.027 UJ	0.03 U	0.03 UJ
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		**0.2**	0.031 U	0.029 U	0.034 UJ	0.031 U	0.03 UJ	0.033 U	0.033 UJ
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**0.25**	0.011 U	0.011 U	**0.032 J-**	0.011 U	0.011 UJ	0.012 U	0.012 UJ
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**0.48**	0.015 U	0.014 U	0.044 J-	0.015 J	0.014 UJ	0.015 U	0.015 UJ
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.29 J	0.021 U	0.02 U	0.033 J-	0.021 U	0.021 UJ	0.023 U	0.023 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.15	0.016 U	0.015 U	0.018 UJ	0.016 U	0.016 UJ	0.017 U	0.017 UJ
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.012 U	0.011 U	0.013 UJ	0.012 U	0.011 UJ	0.012 U	0.012 UJ
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0083 U	0.0088 U	0.0082 U	0.0095 UJ	0.0088 U	0.0085 UJ	0.0093 U	0.0093 UJ
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.015 U	0.014 U	0.064 J	0.043 J+	0.014 UJ	0.015 U	0.015 UJ
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.012 U	0.011 U	0.012 UJ	0.011 U	0.011 UJ	0.012 U	0.012 UJ
Caprolactam	3100	40000	0.25	mg/kg		0.025 UJ	0.027 U	0.025 U	0.029 UJ	0.027 U	0.026 UJ	0.028 U	0.028 UJ
Carbazole	--	--	--	mg/kg		0.032 J	0.0093 U	0.0086 U	0.01 UJ	0.0092 U	0.0089 UJ	0.0098 U	0.0098 UJ
Chrysene	**16**	290	1.2	mg/kg		0.32 J	0.018 J	0.0095 U	0.035 J-	0.01 U	0.0098 UJ	0.011 U	0.011 UJ
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**0.082**	0.019 U	0.018 U	0.021 UJ	0.019 U	0.019 UJ	0.021 U	0.021 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.014 J	0.011 U	0.011 U	0.012 UJ	0.011 U	0.011 UJ	0.012 U	0.012 UJ
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.011 U	0.0099 U	0.011 UJ	0.011 U	0.01 UJ	0.011 U	0.011 UJ

Preliminary Under Review and MDEQ

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-002	CFMW-002	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a
					Sample Date:	6/13/2016	6/13/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	6/2/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	10 - 12	23 - 28
					Sample Designation:	CFMW-002-SO-0-0.5	CFMW-002-SO-0.5-2	CFMW-003a-SO-0-0.5	CFMW-003a-SO-0.5-2	CFMW-003a-SO-10-12	CFMW-DUP9-SO	CFMW-003a-SO-23-28
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.011 U	0.01 U	0.012 UJ	0.011 U	0.01 UJ	0.011 U	0.011 UJ
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.01 U	0.012 UJ	0.011 U	0.011 UJ	0.012 U	0.012 UJ
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.096 J	0.019 U	0.018 U	0.02 UJ	0.019 U	0.018 UJ	0.02 U	0.02 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.38	0.021 J	0.01 U	0.033 J-	0.011 U	0.011 UJ	0.012 U	0.012 UJ
Fluorene	240	3000	0.54	mg/kg		0.0077 U	0.0081 U	0.0076 U	0.0088 UJ	0.0081 U	0.0078 UJ	0.0086 U	0.0086 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.015 U	0.014 U	0.016 UJ	0.015 U	0.015 UJ	0.016 U	0.016 UJ
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0099 U	0.011 U	0.0098 U	0.011 UJ	0.01 U	0.01 UJ	0.011 U	0.011 UJ
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.023 U	0.022 U	0.025 UJ	0.023 UJ	0.022 UJ	0.025 UJ	0.025 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.014 U	0.013 U	0.015 UJ	0.014 U	0.013 UJ	0.014 U	0.014 UJ
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**0.29**	0.025 U	0.023 U	0.027 UJ	0.025 U	0.024 UJ	0.026 U	0.026 UJ
Isophorone	570	2400	0.026	mg/kg		0.0075 U	0.008 U	0.0075 U	0.0086 UJ	0.008 U	0.0077 UJ	0.0085 U	0.0085 UJ
Naphthalene	**3.8**	17	0.00054	mg/kg		0.036 J	0.0095 U	0.0089 U	0.01 UJ	0.0095 U	0.0091 UJ	0.01 U	0.01 UJ
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.012 U	0.011 U	0.013 UJ	0.012 U	0.011 UJ	0.012 U	0.012 UJ
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.013 U	0.012 U	0.014 UJ	0.012 U	0.012 UJ	0.013 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 UJ	0.034 U	0.032 U	0.037 UJ	0.034 U	0.033 UJ	0.036 U	0.036 UJ
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 UJ	0.045 U	0.042 U	0.049 UJ	0.045 U	0.043 UJ	0.048 U	0.048 UJ
Phenanthrene	--	--	--	mg/kg		0.22 J	0.01 U	0.0093 U	0.018 J-	0.0099 U	0.0096 UJ	0.011 U	0.011 UJ
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.012 U	0.011 U	0.013 UJ	0.012 U	0.012 UJ	0.013 U	0.013 UJ
Pyrene	**180**	2300	1.3	mg/kg		0.41	0.017 U	0.016 U	0.042 J-	0.017 U	0.016 UJ	0.018 U	0.018 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-010	CFMW-010	CFMW-010	CFMW-011a
					Sample Date:	6/13/2016	6/13/2016	6/13/2016	5/18/2016	5/18/2016	5/18/2016	6/25/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2
					Sample Designation:	CFMW-008a-SO-0-0.5	CFMW-008a-SO-0.5-2	CFMW-008a-SO-10-12	CFMW-DUP14-SO	CFMW-010-SO-0-0.5	CFMW-010-SO-0.5-2.0	CFMW-010-SO-10-12	CFMW-Dup18-SO
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.16 U	0.3 U	0.031 U	0.03 U	0.032 U	0.032 U	0.03 U	0.034 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.14 U	0.26 U	0.027 U	0.026 U	0.028 U	0.028 U	0.026 U	0.029 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.49 U	0.93 U	0.096 U	0.095 U	0.1 U	0.1 U	0.093 U	0.11 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.075 U	0.14 U	0.015 U	0.015 U	0.015 UJ	0.015 UJ	0.014 UJ	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.17 U	0.33 U	0.034 U	0.033 U	0.035 U	0.035 U	0.033 U	0.037 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.18 U	0.35 U	0.036 U	0.035 U	0.037 U	0.037 U	0.035 U	0.039 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.052 U	0.099 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0099 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.043 U	0.082 U	0.0085 U	0.0084 U	0.0088 U	0.0089 U	0.0082 U	0.0093 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.4 U	0.77 U	0.079 U	0.078 U	0.082 U	0.083 U	0.077 U	0.087 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		1.4 U	2.6 U	0.27 U	0.27 U	0.28 U	0.28 U	0.26 U	0.3 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.072 U	0.14 U	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.016 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.097 U	0.19 U	0.019 U	0.019 U	0.02 U	0.02 U	0.019 U	0.021 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.041 U	0.079 U	0.0082 U	0.008 U	0.0085 U	0.0085 U	0.0079 U	0.0089 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.046 U	0.088 U	0.0091 U	0.009 U	0.0095 U	0.0095 U	0.0088 U	0.01 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.21 J	0.092 J	0.17 J	0.0089 J	0.024 J	0.0083 U	0.0077 U	0.0087 U
2-Methylphenol	320	4100	0.075	mg/kg		0.079 U	0.15 U	0.016 U	0.015 U	0.016 U	0.016 U	0.015 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg		0.06 U	0.11 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg		0.061 U	0.12 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.048 U	0.093 U	0.0096 U	0.0094 U	0.0099 U	0.01 U	0.0093 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.2 U	0.39 U	0.04 U	0.04 U	0.042 U	0.042 U	0.039 U	0.044 U
3-Nitroaniline	--	--	--	mg/kg		0.054 U	0.1 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.012 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.49 U	0.93 U	0.096 U	0.095 U	0.099 U	0.1 U	0.093 U	0.11 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.057 U	0.11 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.078 U	0.15 U	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.017 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.047 U	0.089 U	0.0092 U	0.0091 U	0.0096 U	0.0097 U	0.009 U	0.01 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.054 U	0.1 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.012 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.069 U	0.13 U	0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.015 U
4-Nitrophenol	--	--	--	mg/kg		0.87 U	1.7 U	0.17 U	0.17 U	0.18 U	0.18 UJ	0.17 UJ	0.19 U
Acenaphthene	360	4500	0.55	mg/kg		1.1 J	0.35 J	0.0087 U	0.0086 U	0.19 J	0.0091 U	0.0084 U	0.0095 U
Acenaphthylene	--	--	--	mg/kg		0.047 U	0.089 U	0.0092 U	0.0091 U	0.0096 U	0.0097 U	0.009 U	0.01 U
Acetophenone	780	12000	0.058	mg/kg		0.04 U	0.076 U	0.0078 U	0.0077 U	0.0081 U	0.0082 U	0.0076 U	0.0086 U
Anthracene	1800	23000	5.8	mg/kg		1.8	0.65 J	0.034 U	0.034 U	0.4	0.036 U	0.033 U	0.037 U
Atrazine	2.4	10	0.0002	mg/kg		0.081 U	0.15 U	0.016 U	0.016 U	0.017 U	0.017 U	0.015 U	0.018 U
Benzaldehyde	170	820	0.0041	mg/kg		0.14 U	0.27 U	0.027 U	0.027 U	0.028 U	0.029 U	0.027 U	0.03 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		**6.8**	**2.2**	0.03 U	0.03 U	**2.1**	0.031 U	0.029 U	0.033 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**7**	**2.4**	0.011 U	0.011 U	**2.4**	0.014 J	0.011 U	0.012 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**12**	**3.8**	0.014 U	0.014 U	**3.6**	0.019 J	0.014 U	0.015 U
Benzo[g,h,i]perylene	--	--	--	mg/kg		7.3	1.5 J	0.021 U	0.02 U	2.7	0.022 U	0.02 U	0.023 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		**4.2**	1.6	0.016 U	0.015 U	1.3	0.016 U	0.015 U	0.017 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.057 U	0.11 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.043 U	0.082 U	0.0085 U	0.0084 U	0.0088 U	0.0089 U	0.0082 U	0.0093 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.071 U	0.14 U	0.014 U	0.014 U	0.057 J	0.015 U	0.014 U	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.056 U	0.11 U	0.011 U	0.011 U	0.013 J	0.012 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg		0.13 U	0.25 U	0.026 U	0.026 U	0.027 U	0.027 U	0.025 U	0.028 UJ
Carbazole	--	--	--	mg/kg		1.6 J	0.6 J	0.0089 U	0.0088 U	0.35 J	0.0093 U	0.0086 U	0.0098 U
Chrysene	**16**	290	1.2	mg/kg		12	3.7	0.0098 U	0.0097 U	2.8	0.017 J	0.0095 U	0.011 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**1.9**	**0.5**	0.019 U	0.018 U	**0.63**	0.02 U	0.018 U	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.41 J	0.18 J	0.014 J	0.011 U	0.092 J	0.011 U	0.011 U	0.012 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.052 U	0.099 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0099 U	0.011 U

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Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-010	CFMW-010	CFMW-010	CFMW-011a
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	6/13/2016	5/18/2016	5/18/2016	5/18/2016	6/25/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2
				Sample Designation:	CFMW-008a-SO-0-0.5	CFMW-008a-SO-0.5-2	CFMW-008a-SO-10-12	CFMW-DUP14-SO	CFMW-010-SO-0-0.5	CFMW-010-SO-0.5-2.0	CFMW-010-SO-10-12	CFMW-Dup18-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.053 U	0.1 U	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.054 U	0.1 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.012 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.092 U	0.18 U	0.018 U	0.018 U	0.019 U	0.019 U	0.018 U	0.02 U
Fluoranthene	**240**	3000	8.9	mg/kg	13	6.1	0.011 U	0.011 U	4.1	0.021 J	0.01 U	0.012 U
Fluorene	240	3000	0.54	mg/kg	0.83 J	0.3 J	0.019 J	0.0077 UJ	0.16 J	0.0082 U	0.0076 U	0.0086 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.074 U	0.14 U	0.015 U	0.014 U	0.015 U	0.015 U	0.014 U	0.016 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.051 U	0.098 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0098 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.11 U	0.22 U	0.022 U	0.022 U	0.023 U	0.023 U	0.022 U	0.025 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.067 U	0.13 U	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**7.8**	**1.8**	0.024 U	0.024 U	**2.9**	0.025 U	0.023 U	0.026 U
Isophorone	570	2400	0.026	mg/kg	0.039 U	0.075 U	0.0077 U	0.0076 U	0.008 U	0.0081 U	0.0075 U	0.0085 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.51 J	0.088 U	0.16 J	0.009 UJ	0.043 J	0.0095 U	0.0088 U	0.01 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.057 U	0.11 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.061 U	0.12 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.16 U	0.32 U	0.033 U	0.032 U	0.034 U	0.034 U	0.032 U	0.036 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.22 U	0.42 U	0.044 U	0.043 U	0.045 U	0.045 U	0.042 U	0.048 U
Phenanthrene	--	--	--	mg/kg	7.8	3.6	0.02 J	0.0094 UJ	2.4	0.013 J	0.0093 U	0.01 U
Phenol	1900	25000	0.33	mg/kg	0.059 U	0.11 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U
Pyrene	**180**	2300	1.3	mg/kg	11	3.4 J	0.016 U	0.016 U	3.9	0.017 U	0.016 U	0.018 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-011a	CFMW-011a	CFMW-011a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a
			Sample Date:		6/25/2016	6/25/2016	6/25/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	68 - 73
			Sample Designation:		CFMW-011a-SO-0-0.5	CFMW-011a-SO-0.5-2	CFMW-011a-SO-10-12	CFMW-012A-SO-0-0.5	CFMW-012A-SO-0.5-2	CFMW-012A-SO-10-12	CFMW-DUP3-SO	CFMW-012A-SO-68-73
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.035 U	0.034 U	0.029 U	0.032 U	0.033 U	0.03 U	0.033 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.031 U	0.029 U	0.025 U	0.028 U	0.029 U	0.026 U	0.029 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.11 U	0.11 U	0.091 U	0.1 U	0.1 U	0.094 U	0.1 U	0.095 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.017 U	0.016 U	0.014 U	0.016 U	0.016 U	0.014 U	0.016 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.039 U	0.037 U	0.032 UJ	0.036 U	0.036 U	0.033 UJ	0.036 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.041 U	0.039 U	0.034 UJ	0.038 U	0.038 U	0.035 UJ	0.039 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.012 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0097 U	0.0093 U	0.008 U	0.0089 U	0.0091 U	0.0083 U	0.0091 U	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.091 U	0.087 U	0.074 U	0.083 U	0.085 U	0.077 U	0.085 U	0.078 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.31 U	0.3 U	0.26 R	0.29 U	0.29 U	0.27 UJ	0.29 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.016 U	0.016 U	0.013 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.022 U	0.021 U	0.018 U	0.02 U	0.02 U	0.019 U	0.021 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0094 U	0.009 U	0.0077 U	0.0086 U	0.0087 U	0.008 U	0.0088 U	0.0081 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.01 U	0.01 U	0.0086 U	0.0096 U	0.0098 U	0.0089 U	0.0098 U	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0091 U	0.0087 U	0.0075 U	0.0083 U	0.0085 U	0.0077 U	0.0086 U	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg	0.018 U	0.017 U	0.015 U	0.016 U	0.017 U	0.015 U	0.017 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.014 U	0.013 U	0.011 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.014 U	0.013 U	0.011 UJ	0.013 U	0.013 U	0.012 UJ	0.013 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.011 U	0.011 U	0.009 U	0.01 U	0.01 U	0.0093 U	0.01 U	0.0095 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.046 U	0.044 U	0.038 U	0.042 U	0.043 U	0.039 U	0.043 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.012 U	0.012 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.11 U	0.11 U	0.09 UJ	0.1 U	0.1 U	0.094 UJ	0.1 U	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.013 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.018 U	0.017 U	0.015 U	0.016 U	0.017 U	0.015 U	0.017 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.011 U	0.01 U	0.0087 U	0.0097 U	0.0099 U	0.009 U	0.01 U	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.012 U	0.01 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.016 U	0.015 U	0.013 U	0.014 U	0.015 U	0.013 U	0.015 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.2 U	0.19 U	0.16 U	0.18 U	0.19 U	0.17 U	0.19 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.01 U	0.0096 U	0.0082 U	0.018 J	0.0093 U	0.0085 U	0.012 J	0.0086 U
Acenaphthylene	--	--	--	mg/kg	0.011 U	0.01 U	0.0087 U	0.0097 U	0.0099 U	0.009 U	0.01 U	0.0092 U
Acetophenone	780	12000	0.058	mg/kg	0.009 U	0.0086 U	0.0074 U	0.0082 U	0.0084 U	0.0076 U	0.0084 U	0.0078 U
Anthracene	1800	23000	5.8	mg/kg	0.039 U	0.038 U	0.032 U	0.036 U	0.037 U	0.033 U	0.037 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.018 U	0.018 U	0.015 U	0.017 U	0.017 U	0.016 U	0.017 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.031 U	0.03 U	0.026 U	0.029 U	0.029 U	0.027 U	0.03 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.034 U	0.033 U	0.028 U	0.15	0.07	0.029 U	0.049	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.03 J**	0.012 U	0.01 U	**0.17**	**0.07**	0.011 U	**0.048**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.053	0.015 U	0.013 U	**0.23**	0.092	0.014 U	0.061	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.031 J	0.023 U	0.019 U	0.2 J+	0.055 J+	0.02 U	0.042 J+	0.02 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.023 J	0.017 U	0.015 U	0.083	0.041	0.015 U	0.031 J	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.013 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0097 U	0.0093 U	0.008 U	0.0089 U	0.0091 U	0.0083 U	0.0091 U	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.016 U	0.015 U	0.013 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.013 U	0.012 U	0.01 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.03 UJ	0.028 UJ	0.024 UJ	0.027 UJ	0.028 UJ	0.025 U	0.028 UJ	0.026 UJ
Carbazole	--	--	--	mg/kg	0.01 U	0.0098 U	0.0084 U	0.028 J	0.012 J	0.0087 U	0.0096 UJ	0.0088 U
Chrysene	**16**	290	1.2	mg/kg	0.043 J	0.011 U	0.0092 U	0.19 J	0.085 J	0.0095 U	0.06 J	0.0097 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.021 U	0.021 U	0.018 U	**0.042 J+**	0.02 U	0.018 U	0.02 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.012 U	0.012 U	0.01 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.012 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-011a	CFMW-011a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a
					Sample Date:	6/25/2016	6/25/2016	6/25/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	68 - 73
					Sample Designation:	CFMW-011a-SO-0-0.5	CFMW-011a-SO-0.5-2	CFMW-011a-SO-10-12	CFMW-012A-SO-0-0.5	CFMW-012A-SO-0.5-2	CFMW-012A-SO-10-12	CFMW-DUP3-SO	CFMW-012A-SO-68-73
Dimethyl phthalate	--	--	--	mg/kg		0.012 U	0.011 U	0.0098 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.012 U	0.012 U	0.01 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.021 U	0.02 U	0.017 U	0.019 U	0.02 U	0.018 U	0.02 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.038 J	0.012 U	0.01 U	0.27 J	0.12 J	0.01 U	0.09 J	0.011 U
Fluorene	240	3000	0.54	mg/kg		0.009 U	0.0086 U	0.0074 U	0.012 J	0.0084 U	0.0076 U	0.0085 J	0.0078 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.017 U	0.016 U	0.014 U	0.015 U	0.016 U	0.014 U	0.016 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.012 U	0.011 U	0.0095 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.026 U	0.025 U	0.021 U	0.024 U	0.024 U	0.022 U	0.024 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.015 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U	0.014 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.027 U	0.026 U	0.023 U	**0.19 J+**	0.059 J+	0.023 U	0.046 J+	0.024 U
Isophorone	570	2400	0.026	mg/kg		0.0089 U	0.0085 U	0.0073 U	0.0081 U	0.0083 U	0.0075 U	0.0083 U	0.0077 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.01 U	0.01 U	0.0086 U	0.0096 U	0.0098 U	0.0089 U	0.0098 U	0.0091 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.013 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.014 U	0.013 U	0.011 U	0.013 U	0.013 U	0.012 U	0.013 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.037 U	0.036 U	0.031 U	0.034 U	0.035 U	0.032 U	0.035 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.05 U	0.048 U	0.041 UJ	0.046 U	0.047 U	0.042 UJ	0.047 U	0.043 U
Phenanthrene	--	--	--	mg/kg		0.018 J	0.011 U	0.009 U	0.19 J	0.087 J	0.0093 U	0.073 J	0.0095 U
Phenol	1900	25000	0.33	mg/kg		0.013 U	0.013 U	0.011 U	0.012 U	0.013 U	0.011 U	0.013 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.043 J	0.018 U	0.015 U	0.26 J	0.15 J	0.016 U	0.092 J	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-016a	CFMW-016a	CFMW-018	CFMW-018	CFMW-018	CFMW-018	CFMW-019a
					Sample Date:	6/21/2016	6/21/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/25/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5
					Sample Designation:	CFMW-016a-SO-0-0.5	CFMW-016a-SO-0.5-2	CFMW-016a-SO-10-12	CFMW-018-SO-0-0.5	CFMW-018-SO-0.5-2.0	CFMW-018-SO-10-12	CFMW-DUP2-SO	CFMW-019a-SO-0-0.5
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.035 J	0.03 U	0.032 U	0.032 U	0.032 U	0.029 U	0.029 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.027 U	0.027 U	0.028 U	0.028 U	0.028 U	0.026 U	0.026 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.098 U	0.095 U	0.1 U	0.099 U	0.1 U	0.092 U	0.092 U	0.098 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.035 U	0.034 U	0.035 U	0.035 U	0.035 U	0.032 U	0.032 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.037 U	0.036 U	0.037 U	0.037 U	0.037 U	0.034 U	0.034 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.0098 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0087 U	0.0084 U	0.0088 U	0.0087 U	0.0088 U	0.0081 U	0.0081 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.081 U	0.079 U	0.082 U	0.081 U	0.082 U	0.076 U	0.076 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.28 U	0.27 U	0.28 U	0.28 U	0.28 U	0.26 U	0.26 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.015 U	0.014 U	0.015 U	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.02 U	0.019 U	0.02 U	0.02 U	0.02 U	0.018 U	0.018 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0083 U	0.0081 U	0.0085 U	0.0084 U	0.0085 U	0.0078 U	0.0078 U	0.0083 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0094 U	0.0091 U	0.0095 U	0.0094 U	0.0095 U	0.0088 U	0.0088 U	0.0093 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.11 J	0.0079 U	0.0083 U	0.0082 U	0.0083 U	0.0076 U	0.0076 U	0.0084 J
2-Methylphenol	320	4100	0.075	mg/kg		0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg		0.012 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0098 U	0.0095 U	0.01 U	0.0099 U	0.01 U	0.0092 U	0.0092 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.041 U	0.04 U	0.042 U	0.041 U	0.042 U	0.039 U	0.039 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.098 U	0.095 U	0.1 U	0.099 U	0.1 U	0.092 U	0.092 U	0.098 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.016 U	0.015 U	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0095 U	0.0092 U	0.0096 U	0.0095 U	0.0096 U	0.0089 U	0.0089 U	0.0094 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.014 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg		0.18 U	0.17 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg		0.7	0.0086 U	0.01 J	0.009 U	0.0091 U	0.0083 U	0.0084 U	0.058 J
Acenaphthylene	--	--	--	mg/kg		0.0095 U	0.0092 U	0.0096 U	0.0095 U	0.0096 U	0.0089 U	0.0089 U	0.0094 U
Acetophenone	780	12000	0.058	mg/kg		0.008 U	0.0078 U	0.0081 U	0.0081 U	0.0082 U	0.0075 U	0.0075 U	0.008 U
Anthracene	1800	23000	5.8	mg/kg		1.2	0.034 U	0.036 U	0.035 U	0.036 U	0.033 U	0.033 U	0.093 J
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.016 U	0.017 U	0.016 U	0.017 U	0.015 U	0.015 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg		0.028 U	0.027 U	0.029 U	0.028 U	0.029 U	0.026 U	0.026 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		**2.7**	0.03 U	0.05	0.15	0.038	0.029 U	0.029 U	**0.34**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**2.8**	0.015 J	**0.058**	**0.21**	**0.046**	0.01 U	0.01 U	**0.43**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**3.3**	0.02 J	0.12	**0.33**	0.069	0.013 U	0.013 U	**0.62**
Benzo[g,h,i]perylene	--	--	--	mg/kg		4.2	0.021 U	0.064 J	0.24 J	0.045 J	0.02 U	0.02 U	0.39
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		1.3	0.016 U	0.042	0.12	0.023 J	0.015 U	0.015 U	0.22
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0087 U	0.0084 U	0.0088 U	0.0087 U	0.0088 U	0.0081 U	0.0081 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.014 U	0.015 U	0.062 J	0.015 U	0.013 U	0.013 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg		0.026 U	0.026 U	0.027 U	0.027 U	0.027 U	0.025 U	0.025 U	0.026 U
Carbazole	--	--	--	mg/kg		0.74	0.0089 U	0.0093 U	0.018 J	0.0093 U	0.0086 U	0.0086 U	0.063 J
Chrysene	**16**	290	1.2	mg/kg		3.1	0.013 J	0.091 J	0.22 J	0.048 J	0.0094 U	0.0094 U	0.46
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**0.91**	0.019 U	**0.021 J**	**0.04 J+**	0.019 U	0.018 U	0.018 U	**0.1**
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.3 J	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.027 J
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.0098 U	0.01 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-016a	CFMW-016a	CFMW-018	CFMW-018	CFMW-018	CFMW-018	CFMW-019a
					Sample Date:	6/21/2016	6/21/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/25/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5
					Sample Designation:	CFMW-016a-SO-0-0.5	CFMW-016a-SO-0.5-2	CFMW-016a-SO-10-12	CFMW-018-SO-0-0.5	CFMW-018-SO-0.5-2.0	CFMW-018-SO-10-12	CFMW-DUP2-SO	CFMW-019a-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.023 J	0.011 U	0.02 J	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.018 U	0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		6.1	0.017 J	0.096 J	0.22 J	0.047 J	0.01 U	0.01 U	0.66
Fluorene	240	3000	0.54	mg/kg		0.58	0.0078 U	0.0088 J	0.0081 U	0.0082 U	0.0075 U	0.0075 U	0.046 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.014 U	0.015 U	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.0097 U	0.0097 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 U	0.022 U	0.023 U	0.023 U	0.023 U	0.022 U	0.022 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**3.9**	0.024 U	0.053	**0.23 J+**	0.038 J+	0.023 U	0.023 U	**0.42**
Isophorone	570	2400	0.026	mg/kg		0.0079 U	0.0077 U	0.008 U	0.008 U	0.008 U	0.0074 U	0.0074 U	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.29 J	0.0091 U	0.0095 U	0.0094 U	0.0095 U	0.0088 U	0.0088 U	0.016 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.033 U	0.032 U	0.034 U	0.034 U	0.034 U	0.031 U	0.031 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.045 U	0.043 U	0.045 U	0.045 U	0.045 U	0.042 U	0.042 U	0.044 U
Phenanthrene	--	--	--	mg/kg		5.7	0.014 J	0.068 J	0.093 J	0.027 J	0.0092 U	0.0092 U	0.46
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		6.4	0.018 J	0.1 J	0.27 J	0.063 J	0.016 U	0.016 U	0.6

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-022	CFMW-022	CFMW-022	CFMW-022	CFMW-023a
					Sample Date:	5/25/2016	5/25/2016	5/25/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/17/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFMW-019a-SO-0.5-2	CFMW-019a-SO-10-12	CFMW-DUP5-SO	CFMW-022-SO-0-0.5	CFMW-022-SO-0.5-2	CFMW-DUP12-SO	CFMW-022-SO-10-12	CFMW-023a-SO-0-0.5
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.033 U	0.029 U	0.033 U	0.032 U	0.03 U	0.03 U	0.033 U	0.033 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.029 U	0.026 U	0.029 U	0.028 U	0.026 U	0.026 U	0.028 UJ	0.029 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.1 U	0.092 U	0.1 U	0.1 U	0.093 U	0.093 U	0.1 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.016 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.016 U	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.037 UJ	0.032 UJ	0.036 U	0.035 U	0.033 U	0.033 U	0.036 UJ	0.037 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.039 UJ	0.034 U	0.038 U	0.037 U	0.035 U	0.035 U	0.038 UJ	0.039 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.011 UJ	0.0098 U	0.011 U	0.011 U	0.0099 U	0.0099 U	0.011 UJ	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0092 UJ	0.0081 U	0.0091 U	0.0089 U	0.0082 U	0.0082 U	0.009 UJ	0.0092 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.086 UJ	0.076 U	0.085 U	0.083 U	0.077 U	0.077 U	0.084 U	0.086 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.3 UJ	0.26 R	0.29 U	0.28 U	0.26 U	0.26 U	0.29 R	0.29 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.015 U	0.014 U	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.021 U	0.018 U	0.021 U	0.02 U	0.019 U	0.019 U	0.02 U	0.021 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0089 U	0.0078 U	0.0088 U	0.0085 U	0.0079 U	0.0079 U	0.0087 U	0.0088 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0099 UJ	0.0088 U	0.0098 U	0.0096 U	0.0089 U	0.0089 U	0.0097 U	0.0099 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0086 U	0.0076 U	0.0085 U	0.0083 U	0.0077 U	0.0077 U	0.0085 U	0.048 J
2-Methylphenol	320	4100	0.075	mg/kg		0.017 U	0.015 U	0.017 U	0.016 U	0.015 U	0.015 U	0.017 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg		0.013 U	0.011 U	0.013 U	0.012 U	0.012 U	0.011 U	0.013 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg		0.013 UJ	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.013 UJ	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.01 U	0.0092 U	0.01 U	0.01 U	0.0093 U	0.0093 U	0.01 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.044 U	0.039 U	0.043 U	0.042 U	0.039 U	0.039 U	0.043 U	0.043 U
3-Nitroaniline	--	--	--	mg/kg		0.012 U	0.01 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U	0.012 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.1 UJ	0.092 UJ	0.1 U	0.1 U	0.093 U	0.093 U	0.1 UJ	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 UJ	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.017 U	0.015 U	0.017 U	0.016 U	0.015 U	0.015 U	0.016 U	0.017 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.01 U	0.0089 U	0.0099 U	0.0097 U	0.009 U	0.009 U	0.0098 U	0.01 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.012 U	0.01 U	0.012 U	0.011 U	0.01 U	0.01 U	0.011 U	0.012 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.015 U	0.013 U	0.015 U	0.014 U	0.013 U	0.013 U	0.014 U	0.015 U
4-Nitrophenol	--	--	--	mg/kg		0.19 U	0.17 U	0.19 U	0.18 U	0.17 U	0.17 U	0.18 U	0.19 U
Acenaphthene	360	4500	0.55	mg/kg		0.0095 U	0.0084 U	0.023 J	0.0091 U	0.0084 U	0.0084 U	0.011 J	0.061 J
Acenaphthylene	--	--	--	mg/kg		0.01 U	0.0089 U	0.0099 U	0.0097 U	0.009 U	0.009 U	0.0098 U	0.01 U
Acetophenone	780	12000	0.058	mg/kg		0.0085 U	0.0075 U	0.0084 U	0.0082 U	0.0076 U	0.0076 U	0.0083 U	0.0085 U
Anthracene	1800	23000	5.8	mg/kg		0.037 U	0.033 U	0.037 U	0.036 U	0.033 U	0.033 U	0.036 U	0.072 J
Atrazine	2.4	10	0.0002	mg/kg		0.017 U	0.015 U	0.017 U	0.017 U	0.016 U	0.016 U	0.017 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg		0.03 UJ	0.026 U	0.029 U	0.029 U	0.027 U	0.027 U	0.029 U	0.03 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.048	0.029 U	0.13	0.069	0.097 J	0.029 UJ	0.13	**0.26**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**0.049**	0.01 U	**0.17**	**0.077**	0.011 U	0.011 U	**0.12**	**0.33**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.073	0.013 U	**0.23**	**0.23**	**0.35 J**	0.014 UJ	**0.32**	**0.55**
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.04 J	0.02 U	0.13 J	0.086 J	0.02 U	0.02 U	0.11 J	0.33 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.028 J	0.015 U	0.09	0.078	0.075 J	0.015 UJ	0.12	0.19
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0092 U	0.0081 U	0.0091 U	0.0089 U	0.0082 U	0.0082 U	0.009 U	0.0092 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.015 U	0.013 U	0.015 U	0.015 U	0.014 U	0.014 U	0.061 J	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.028 J	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg		0.028 UJ	0.025 U	0.028 U	0.027 U	0.025 U	0.025 U	0.028 UJ	0.028 U
Carbazole	--	--	--	mg/kg		0.0097 U	0.0086 U	0.021 J	0.0093 U	0.0087 U	0.0086 U	0.016 J	0.058 J
Chrysene	**16**	290	1.2	mg/kg		0.053 J	0.0094 U	0.19 J	0.14 J	0.19 J	0.0095 UJ	0.18 J	0.41
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.02 U	0.018 U	**0.039 J+**	**0.025 J**	0.018 U	0.018 U	**0.036 J**	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.012 U	0.01 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.021 J
Diethyl phthalate	5100	66000	0.61	mg/kg		0.011 U	0.0098 U	0.011 U	0.011 U	0.0099 U	0.0099 U	0.011 U	0.011 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-022	CFMW-022	CFMW-022	CFMW-022	CFMW-023a
					Sample Date:	5/25/2016	5/25/2016	5/25/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/17/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFMW-019a-SO-0.5-2	CFMW-019a-SO-10-12	CFMW-DUP5-SO	CFMW-022-SO-0-0.5	CFMW-022-SO-0.5-2	CFMW-DUP12-SO	CFMW-022-SO-10-12	CFMW-023a-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.012 U	0.01 U	0.012 U	0.011 U	0.01 U	0.01 U	0.011 U	0.052 J
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.02 U	0.018 U	0.02 U	0.019 U	0.018 U	0.018 U	0.019 U	0.02 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.071 J	0.01 U	0.25 J	0.12 J	0.13 J	0.01 UJ	0.23 J	0.52
Fluorene	240	3000	0.54	mg/kg		0.0085 U	0.0075 U	0.018 J	0.0082 U	0.0076 U	0.0076 U	0.0084 J	0.035 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.016 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.016 UJ	0.016 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.011 U	0.0097 U	0.011 U	0.011 U	0.0098 U	0.0098 U	0.011 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.024 UJ	0.022 U	0.024 UJ	0.023 U	0.022 U	0.022 U	0.024 U	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.045 J+	0.023 U	0.14 J+	0.088	0.023 U	0.023 U	0.12	**0.34**
Isophorone	570	2400	0.026	mg/kg		0.0084 U	0.0074 U	0.0083 U	0.0081 U	0.0075 U	0.0075 U	0.0082 U	0.0084 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0099 U	0.0088 U	0.01 J	0.0096 U	0.0089 U	0.0089 U	0.0097 U	0.015 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.013 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.013 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.035 UJ	0.031 U	0.035 U	0.034 U	0.032 U	0.032 U	0.035 UJ	0.035 UJ
Pentachlorophenol	1	4	0.000057	mg/kg		0.047 UJ	0.042 UJ	0.047 U	0.046 U	0.042 U	0.042 U	0.046 UJ	0.047 U
Phenanthrene	--	--	--	mg/kg		0.05 J	0.0092 U	0.16 J	0.047 J	0.0093 U	0.0093 U	0.1 J	0.36 J
Phenol	1900	25000	0.33	mg/kg		0.013 U	0.011 U	0.013 U	0.012 U	0.011 U	0.011 U	0.013 U	0.013 U
Pyrene	**180**	2300	1.3	mg/kg		0.071 J	0.016 U	0.24 J	0.1 J	0.12 J	0.016 UJ	0.2 J	0.56

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-023a	CFMW-023a	CFMW-025a	CFMW-025a	CFMW-025a	CFMW-026	CFMW-026
				Sample Date:	6/17/2016	6/17/2016	7/13/2016	7/13/2016	7/13/2016	6/14/2016	6/14/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-023a-SO-0.5-2	CFMW-023a-SO-10-12	CFMW-025a-SO-0-0.5	CFMW-025a-SO-0.5-2	CFMW-025a-SO-10-12	CFMW-026-SO-0-0.5	CFMW-026-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.031 U	0.036 U	0.031 U	0.029 UJ	0.041 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.027 U	0.032 U	0.027 U	0.026 UJ	0.036 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.096 U	0.11 U	0.098 U	0.092 U	0.13 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.016 U	0.015 U	0.018 U	0.015 U	0.014 U	0.02 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.036 U	0.034 U	0.04 U	0.034 U	0.032 UJ	0.045 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.038 U	0.036 U	0.043 U	0.036 U	0.034 UJ	0.048 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0098 UJ	0.014 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.009 U	0.0085 U	0.01 U	0.0086 U	0.0081 UJ	0.011 U	0.0088 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.084 U	0.079 U	0.094 U	0.08 U	0.076 UJ	0.11 U	0.082 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.29 U	0.27 U	0.32 U	0.28 U	0.26 R	0.36 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.014 U	0.017 U	0.014 U	0.014 UJ	0.019 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.019 U	0.023 U	0.019 U	0.018 UJ	0.026 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0086 U	0.0082 U	0.0097 U	0.0083 U	0.0078 UJ	0.011 U	0.0085 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0097 U	0.0092 U	0.011 U	0.0093 U	0.0088 UJ	0.012 U	0.0095 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0084 U	0.008 U	0.0094 U	0.0081 U	0.0076 UJ	0.011 U	0.0083 U
2-Methylphenol	320	4100	0.075	mg/kg	0.017 U	0.016 U	0.019 U	0.016 U	0.015 U	0.021 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.013 U	0.012 U	0.014 U	0.012 U	0.011 U	0.016 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.012 U	0.014 U	0.012 U	0.012 UJ	0.016 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.01 U	0.0096 U	0.011 U	0.0097 U	0.0092 U	0.013 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.04 U	0.048 U	0.041 U	0.038 U	0.054 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.013 U	0.011 U	0.01 U	0.014 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.096 U	0.11 U	0.097 U	0.092 UJ	0.13 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	0.013 U	0.011 U	0.011 UJ	0.015 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.015 U	0.018 U	0.016 U	0.015 U	0.021 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0098 U	0.0093 U	0.011 U	0.0094 U	0.0089 U	0.012 U	0.0096 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.013 UJ	0.011 UJ	0.01 UJ	0.014 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.016 U	0.014 U	0.013 U	0.018 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 U	0.21 U	0.18 U	0.17 U	0.23 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0092 U	0.0087 U	0.01 U	0.0088 U	0.0083 UJ	0.012 J	0.0091 U
Acenaphthylene	--	--	--	mg/kg	0.0098 U	0.0093 U	0.011 U	0.0094 U	0.0089 UJ	0.012 U	0.0096 U
Acetophenone	780	12000	0.058	mg/kg	0.0083 U	0.0079 U	0.0093 U	0.0079 U	0.0075 U	0.01 U	0.0083 J
Anthracene	1800	23000	5.8	mg/kg	0.036 U	0.034 U	0.041 U	0.035 U	0.033 UJ	0.046 U	0.036 U
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.016 U	0.019 U	0.016 U	0.015 U	0.021 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.029 U	0.027 U	0.033 U	0.028 U	0.026 UJ	0.037 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.032 U	0.03 U	0.078	0.03 U	0.029 UJ	**0.2**	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	0.011 U	**0.088**	0.011 U	0.01 UJ	**0.24**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.015 U	0.014 U	**0.18**	0.014 U	0.013 UJ	**0.52**	0.021 J
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.022 U	0.021 U	0.11 J	0.021 U	0.02 U	0.28 J	0.022 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.017 U	0.016 U	0.056	0.016 U	0.015 UJ	0.19	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.011 U	0.013 U	0.011 U	0.011 U	0.015 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.009 U	0.0085 U	0.01 U	0.0086 U	0.0081 U	0.011 U	0.0088 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.014 U	0.017 U	0.014 U	0.013 UJ	0.13 J	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.011 U	0.013 U	0.011 U	0.011 U	0.015 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.026 U	0.031 U	0.026 U	0.025 UJ	0.035 U	0.027 UJ
Carbazole	--	--	--	mg/kg	0.0094 U	0.0089 U	0.014 J	0.009 U	0.0086 UJ	0.031 J	0.0093 U
Chrysene	**16**	290	1.2	mg/kg	0.01 U	0.0098 U	0.14 J	0.0099 U	0.0094 UJ	0.37 J	0.018 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.02 U	0.019 U	**0.023 J**	0.019 U	0.018 U	**0.059**	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.011 U	0.013 U	0.011 U	0.01 UJ	0.015 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0098 UJ	0.014 U	0.011 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-023a	CFMW-023a	CFMW-025a	CFMW-025a	CFMW-025a	CFMW-026	CFMW-026
				Sample Date:	6/17/2016	6/17/2016	7/13/2016	7/13/2016	7/13/2016	6/14/2016	6/14/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-023a-SO-0.5-2	CFMW-023a-SO-10-12	CFMW-025a-SO-0-0.5	CFMW-025a-SO-0.5-2	CFMW-025a-SO-10-12	CFMW-026-SO-0-0.5	CFMW-026-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.01 U	0.012 U	0.011 U	0.01 UJ	0.014 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.038 J	0.011 U	0.013 J	0.011 U	0.01 UJ	0.014 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.018 U	0.022 U	0.019 U	0.018 U	0.024 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.011 U	0.011 U	0.13 J	0.011 U	0.011 J-	0.35 J	0.019 J
Fluorene	240	3000	0.54	mg/kg	0.0083 U	0.0079 U	0.0093 UJ	0.0079 UJ	0.0075 UJ	0.01 U	0.0082 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.015 U	0.017 U	0.015 U	0.014 UJ	0.019 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.011 U	0.01 U	0.012 UJ	0.01 UJ	0.0097 UJ	0.014 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.024 U	0.022 U	0.027 U	0.023 U	0.021 U	0.03 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.014 U	0.013 U	0.016 U	0.013 U	0.013 UJ	0.018 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.025 U	0.024 U	0.1	0.024 U	0.023 U	**0.3**	0.025 U
Isophorone	570	2400	0.026	mg/kg	0.0082 U	0.0077 U	0.0092 U	0.0078 U	0.0074 U	0.01 U	0.008 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0097 U	0.0092 U	0.011 U	0.0093 U	0.0088 UJ	0.012 U	0.0095 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.011 U	0.013 U	0.011 U	0.011 UJ	0.015 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.013 U	0.012 U	0.014 U	0.012 U	0.012 U	0.016 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.034 UJ	0.033 UJ	0.039 U	0.033 U	0.031 UJ	0.044 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.046 U	0.044 U	0.052 U	0.044 U	0.042 UJ	0.058 U	0.045 U
Phenanthrene	--	--	--	mg/kg	0.01 U	0.0096 U	0.072 J	0.01 J	0.0092 UJ	0.14 J	0.015 J
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.014 U	0.012 U	0.011 U	0.016 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg	0.017 U	0.016 U	0.11 J	0.017 U	0.016 U	0.34 J	0.022 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-026	CFMW-026	CFMW-027	CFMW-027	CFMW-027	CFMW-028a	CFMW-028a	CFMW-028a
				Sample Date:	6/14/2016	6/14/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	4.5 - 6
				Sample Designation:	CFMW-DUP15-SO	CFMW-026-SO-10-12	CFMW-027-SO-0-0.5	CFMW-027-SO-0.5-2	CFMW-027-SO-10-12	CFMW-028a-SO-0-0.5	CFMW-028a-SO-0.5-2	CFMW-028a-SO-4.5-6
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.03 U	4.1 U	0.4 U	0.061 U	0.033 U	0.031 U	10 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.026 U	3.6 U	0.35 U	0.053 U	0.029 U	0.027 U	9 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.093 U	13 U	1.3 U	0.19 U	0.1 U	0.098 R	32 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.014 U	2 U	0.19 U	0.029 U	0.016 U	0.015 U	5 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.033 U	4.5 U	0.45 U	0.067 U	0.037 U	0.035 UJ	11 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.035 U	4.8 U	0.47 U	0.071 U	0.039 U	0.037 U	12 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.0099 U	1.4 U	0.13 U	0.02 U	0.011 U	0.01 U	3.4 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0088 U	0.0082 U	1.1 U	0.11 U	0.017 U	0.0092 U	0.0087 U	2.9 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.082 U	0.076 U	11 U	1 U	0.16 U	0.086 U	0.081 UJ	27 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.26 UJ	37 U	3.6 U	0.54 U	0.3 U	0.28 R	91 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.014 U	1.9 U	0.19 U	0.028 U	0.015 U	0.015 U	4.8 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.018 U	2.6 U	0.25 U	0.038 U	0.021 U	0.02 U	6.4 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0084 U	0.0079 U	1.1 U	0.11 U	0.016 U	0.0089 U	0.0083 U	2.7 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0095 U	0.0088 U	1.2 U	0.12 U	0.018 U	0.0099 U	0.0093 U	3.1 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0082 U	0.0077 U	3.6 J	0.42 J	0.037 J	0.0086 U	0.0081 U	4.4 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.015 U	2.1 U	0.21 U	0.031 U	0.017 U	0.016 U	5.3 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.011 U	1.6 U	0.16 U	0.024 U	0.013 U	0.012 U	4 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.012 U	1.6 U	0.16 U	0.024 U	0.013 U	0.012 UJ	4.1 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0099 U	0.0092 U	1.3 U	0.13 U	0.019 U	0.01 U	0.0098 U	3.2 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.039 U	5.4 U	0.53 U	0.08 U	0.044 U	0.041 U	13 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.01 U	1.4 U	0.14 U	0.021 U	0.012 U	0.011 U	3.6 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.099 U	0.093 UJ	13 U	1.3 U	0.19 U	0.1 U	0.098 UJ	32 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	1.5 U	0.15 U	0.023 U	0.012 U	0.012 U	3.8 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.015 U	2.1 U	0.2 U	0.031 U	0.017 U	0.016 U	5.2 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0096 U	0.0089 U	1.2 U	0.12 U	0.018 U	0.01 U	0.0095 U	3.1 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.01 U	1.4 U	0.14 U	0.021 U	0.012 U	0.011 U	3.6 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.013 U	1.8 U	0.18 U	0.027 U	0.015 U	0.014 U	4.6 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 U	23 U	2.3 U	0.34 U	0.19 U	0.18 U	58 U
Acenaphthene	360	4500	0.55	mg/kg	0.009 U	0.0084 U	40 J	2.5 J	0.55 J	0.036 J	0.0089 U	55 J
Acenaphthylene	--	--	--	mg/kg	0.0096 U	0.0089 U	1.2 J	0.12 U	0.018 U	0.01 U	0.0095 U	3.1 U
Acetophenone	780	12000	0.058	mg/kg	0.0081 U	0.0076 U	1.1 U	0.1 U	0.016 U	0.0085 U	0.008 U	2.6 U
Anthracene	1800	23000	5.8	mg/kg	0.035 U	0.033 U	41 J	8	0.66 J	0.08 J	0.035 U	100 J
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.015 U	2.2 U	0.21 U	0.032 U	0.017 U	0.016 U	5.4 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.026 U	3.7 U	0.36 U	0.055 U	0.03 U	0.028 U	9.2 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.031 U	0.029 U	**280**	**39**	**5.7**	**0.57**	0.031 U	**400**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.012 J	0.011 U	**320**	**39**	**6.6**	**0.74**	0.012 J	**450**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.031 J	0.014 U	**460**	**67**	**8.1**	**1.1**	0.02 J	**570**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.021 U	0.02 U	250	36	6.5	0.71	0.021 U	290
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.016 U	0.015 U	**150**	**23**	**2.8**	0.41	0.016 U	**210**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.011 U	1.5 U	0.15 U	0.022 U	0.012 U	0.011 U	3.8 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0088 U	0.0082 U	1.1 U	0.11 U	0.017 U	0.0092 U	0.0087 U	2.9 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.014 U	1.9 U	0.18 U	0.028 U	0.015 U	0.014 U	5.1 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	1.5 U	0.15 U	0.022 U	0.012 U	0.011 U	3.7 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 UJ	0.025 U	3.5 U	0.34 U	0.052 U	0.028 U	0.026 UJ	8.7 U
Carbazole	--	--	--	mg/kg	0.0092 U	0.0086 U	33 J	3.6 J	0.55 J	0.069 J	0.0091 U	42 J
Chrysene	**16**	290	1.2	mg/kg	0.023 J	0.0095 U	**350**	**56**	6.2	0.77	0.012 J	**500**
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.019 U	0.018 U	**70**	**9.3**	**1.8**	**0.19**	0.019 U	6.3 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.011 U	7.3 J	1.3 J	0.091 J	0.014 J	0.011 U	**15 J**
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.0099 U	1.4 U	0.13 U	0.02 U	0.011 U	0.01 U	3.4 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-026	CFMW-026	CFMW-027	CFMW-027	CFMW-027	CFMW-028a	CFMW-028a	CFMW-028a
				Sample Date:	6/14/2016	6/14/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	4.5 - 6
				Sample Designation:	CFMW-DUP15-SO	CFMW-026-SO-10-12	CFMW-027-SO-0-0.5	CFMW-027-SO-0.5-2	CFMW-027-SO-10-12	CFMW-028a-SO-0-0.5	CFMW-028a-SO-0.5-2	CFMW-028a-SO-4.5-6
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.01 U	1.4 U	0.14 U	0.021 U	0.011 U	0.011 U	3.5 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.01 U	1.4 U	0.14 U	0.021 U	0.022 J	0.011 U	3.6 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.027 J	0.018 U	2.5 U	0.24 U	0.036 U	0.02 U	0.019 U	6.1 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.026 J	0.01 U	**430**	75	7.4	0.9	0.013 J	**1000**
Fluorene	240	3000	0.54	mg/kg	0.0081 U	0.0076 U	16 J	1.8 J	0.2 J	0.023 J	0.008 U	33 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.014 U	2 U	0.19 U	0.029 U	0.016 U	0.015 U	4.9 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.0098 U	1.4 U	0.13 U	0.02 U	0.011 U	0.01 U	3.4 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.023 U	0.022 UJ	3 U	0.3 U	0.045 U	0.024 U	0.023 U	7.5 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.014 U	0.013 U	1.8 U	0.17 U	0.026 U	0.014 U	0.013 U	4.4 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.025 U	0.023 U	**260**	**37**	**6.8**	**0.71**	0.024 U	**360**
Isophorone	570	2400	0.026	mg/kg	0.008 U	0.0075 U	1 U	0.1 U	0.015 U	0.0084 U	0.0079 U	2.6 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0095 U	0.0088 U	**6.5 J**	1.2 J	0.054 J	0.012 J	0.0093 U	**8 J**
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.011 U	1.5 U	0.15 U	0.023 U	0.012 U	0.012 U	3.8 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.013 U	0.012 U	1.6 U	0.16 U	0.024 U	0.013 U	0.012 U	4.1 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.034 U	0.032 UJ	4.4 U	0.43 U	0.065 U	0.035 U	0.033 U	11 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.045 U	0.042 UJ	5.9 U	0.57 U	0.087 U	0.047 U	0.045 UJ	15 U
Phenanthrene	--	--	--	mg/kg	0.021 J	0.0092 U	200	27	3	0.47	0.0098 U	440
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.011 U	1.6 U	0.15 U	0.023 U	0.013 U	0.012 U	4 U
Pyrene	**180**	2300	1.3	mg/kg	0.029 J	0.016 U	**440**	77	7.4	1.1	0.017 U	**730**

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-028a	CFMW-028a	CFMW-029	CFMW-029	CFMW-029	CFMW-032a	CFMW-032a
				Sample Date:	6/30/2016	6/30/2016	5/18/2016	5/18/2016	5/18/2016	8/8/2016	8/8/2016
				Sample Depth (ft-bls):	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-028a-SO-10-12	CFMW-DUP19-SO	CFMW-029-SO-0-0.5	CFMW-029-SO-0.5-2.0	CFMW-029-SO-10-12	CFMW-032a-SO-0-0.5	CFMW-032a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.06 U	0.03 U	0.03 U	0.032 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.026 U	0.053 U	0.026 U	0.026 U	0.028 U	0.026 UJ
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.093 U	0.093 U	0.19 U	0.094 U	0.093 U	0.1 U	0.093 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.029 UJ	0.014 UJ	0.014 UJ	0.015 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.033 U	0.067 U	0.033 U	0.033 U	0.035 U	0.033 UJ
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.035 U	0.071 U	0.035 U	0.035 U	0.037 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0099 U	0.0099 U	0.02 U	0.01 U	0.0099 U	0.011 U	0.0099 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0082 U	0.0082 U	0.017 U	0.0083 U	0.0082 U	0.0089 U	0.0082 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.076 U	0.077 U	0.16 U	0.077 U	0.077 U	0.083 U	0.076 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.26 U	0.54 U	0.27 U	0.26 U	0.28 U	0.26 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.028 U	0.014 U	0.014 U	0.015 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.019 U	0.038 U	0.019 U	0.019 U	0.02 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.0079 U	0.016 U	0.008 U	0.0079 U	0.0085 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0088 U	0.0088 U	0.018 U	0.0089 U	0.0089 U	0.0096 U	0.0088 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.0077 U	0.031 J	0.0078 U	0.0077 U	0.0083 U	0.0077 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.031 U	0.015 U	0.015 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.023 U	0.012 U	0.011 U	0.012 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.024 U	0.012 U	0.012 U	0.013 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0092 U	0.0093 U	0.019 U	0.0094 U	0.0093 U	0.01 U	0.0092 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.039 U	0.079 U	0.039 U	0.039 U	0.042 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.021 U	0.01 U	0.01 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.093 U	0.19 U	0.094 U	0.093 U	0.1 U	0.093 UJ
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.012 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.03 U	0.015 U	0.015 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0089 U	0.0089 U	0.018 U	0.009 U	0.009 U	0.0097 U	0.0089 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.021 U	0.011 U	0.01 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.027 U	0.013 U	0.013 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.34 U	0.17 U	0.17 UJ	0.18 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0084 U	0.0084 U	0.2 J	0.031 J	0.0084 U	0.0091 U	0.0084 U
Acenaphthylene	--	--	--	mg/kg	0.0089 U	0.0089 U	0.018 U	0.009 U	0.009 U	0.0097 U	0.0089 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0076 U	0.015 U	0.0077 U	0.0076 U	0.0082 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.033 U	0.34 J	0.065 J	0.033 U	0.036 U	0.033 U
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.015 U	0.032 U	0.016 U	0.016 U	0.017 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 U	0.027 U	0.054 U	0.027 U	0.027 U	0.029 U	0.026 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.036	0.044	**2.8**	**0.26**	0.029 U	0.052	0.031 J
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.034 J**	**0.054**	**3.1**	**0.32**	0.012 J	**0.062**	**0.029 J**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.043 J	0.075 J	**6.5**	**0.43**	0.016 J	0.13	0.044
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.023 J	0.042 J	4.1	0.42	0.02 U	0.075 J	0.026 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.021 J	0.029 J	**2.2**	0.17	0.015 U	0.035 J	0.021 J
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.012 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0082 U	0.0082 U	0.017 U	0.0083 U	0.0082 U	0.0089 U	0.0082 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U	0.079 J	0.014 U	0.014 U	0.16 J	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.012 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.025 U	0.051 U	0.025 U	0.025 U	0.027 U	0.025 U
Carbazole	--	--	--	mg/kg	0.0086 U	0.0086 U	0.29 J	0.046 J	0.0086 U	0.0093 U	0.0086 U
Chrysene	**16**	290	1.2	mg/kg	0.031 J	0.057 J	4.1	0.36	0.013 J	0.09 J	0.035 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.018 U	**1.2**	**0.078**	0.018 U	0.02 U	0.018 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.01 U	0.011 U	0.06 J	0.016 J	0.011 U	0.011 U	0.01 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0099 U	0.0099 U	0.02 U	0.01 U	0.0099 U	0.011 U	0.0099 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-028a	CFMW-028a	CFMW-029	CFMW-029	CFMW-029	CFMW-032a	CFMW-032a
				Sample Date:	6/30/2016	6/30/2016	5/18/2016	5/18/2016	5/18/2016	8/8/2016	8/8/2016
				Sample Depth (ft-bls):	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-028a-SO-10-12	CFMW-DUP19-SO	CFMW-029-SO-0-0.5	CFMW-029-SO-0.5-2.0	CFMW-029-SO-10-12	CFMW-032a-SO-0-0.5	CFMW-032a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.01 U	0.021 U	0.01 U	0.01 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.013 J	0.015 J	0.021 U	0.011 U	0.01 U	0.011 U	0.015 J
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.018 U	0.036 U	0.018 U	0.018 U	0.019 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.049 J	0.089 J	4	0.46	0.026 J	0.079 J	0.033 J
Fluorene	240	3000	0.54	mg/kg	0.0076 U	0.0076 U	0.099 J	0.026 J	0.0076 U	0.0082 U	0.0076 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.014 U	0.029 U	0.014 U	0.014 U	0.015 U	0.014 UJ
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0098 U	0.0098 U	0.02 U	0.0099 U	0.0098 U	0.011 U	0.0098 UJ
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.022 U	0.044 U	0.022 U	0.022 U	0.023 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U	0.026 U	0.013 U	0.013 U	0.014 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.027 J	0.044	**5.1**	**0.42**	0.023 U	0.091	0.023 J
Isophorone	570	2400	0.026	mg/kg	0.0074 U	0.0075 U	0.015 U	0.0076 U	0.0075 U	0.0081 U	0.0074 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0088 U	0.0088 U	0.032 J	0.011 J	0.0089 U	0.0096 U	0.0088 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.012 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.024 U	0.012 U	0.012 U	0.013 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.031 U	0.032 U	0.064 U	0.032 U	0.032 U	0.034 U	0.031 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 U	0.042 U	0.086 U	0.043 U	0.042 U	0.046 U	0.042 UJ
Phenanthrene	--	--	--	mg/kg	0.032 J	0.049 J	1.5	0.29 J	0.021 J	0.049 J	0.018 J
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.011 U	0.023 U	0.011 U	0.011 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg	0.045 J	0.089 J	2.9	0.38	0.018 J	0.094 J	0.035 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-032a	CFMW-032a	CFMW-033	CFMW-033	CFMW-033	CFMW-034	CFMW-034	CFMW-034
					Sample Date:	8/8/2016	8/8/2016	7/1/2016	7/1/2016	7/1/2016	5/31/2016	5/31/2016	5/31/2016
					Sample Depth (ft-bls):	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2
					Sample Designation:	CFMW-032a-SO-10-12	CFMW-Dup21-SO	CFMW-033-SO-0-0.5	CFMW-033-SO-0.5-2	CFMW-033-SO-10-12	CFMW-034-SO-0-0.5	CFMW-034-SO-0.5-2	CFMW-DUP10-SO
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.031 U	0.031 U	0.034 U	0.031 U	0.03 U	0.03 U	0.031 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.027 U	0.027 U	0.03 U	0.027 U	0.026 U	0.026 U	0.027 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.096 U	0.096 U	0.11 U	0.099 U	0.094 U	0.095 U	0.096 U	0.093 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.015 U	0.015 U	0.016 U	0.015 U	0.014 U	0.015 U	0.015 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.034 U	0.034 U	0.038 U	0.035 U	0.033 U	0.034 U	0.034 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.036 U	0.036 U	0.04 U	0.037 U	0.035 U	0.035 U	0.036 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0099 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0084 U	0.0085 U	0.0094 U	0.0087 U	0.0083 U	0.0084 U	0.0085 U	0.0082 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.079 U	0.079 U	0.088 U	0.081 U	0.077 U	0.078 U	0.079 U	0.076 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.27 U	0.27 U	0.3 U	0.28 U	0.26 U	0.27 U	0.27 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.019 U	0.019 U	0.021 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0081 U	0.0082 U	0.0091 U	0.0084 U	0.0079 U	0.0081 U	0.0081 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0091 U	0.0091 U	0.01 U	0.0094 U	0.0089 U	0.009 U	0.0091 U	0.0088 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0079 U	0.0079 U	0.0088 U	0.0082 U	0.0077 U	0.008 J	0.0079 U	0.0077 U
2-Methylphenol	320	4100	0.075	mg/kg		0.016 U	0.016 U	0.017 U	0.016 U	0.015 U	0.016 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg		0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0095 U	0.0096 U	0.011 U	0.0098 U	0.0093 U	0.0095 U	0.0096 U	0.0093 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.04 U	0.04 U	0.045 U	0.041 U	0.039 U	0.04 U	0.04 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg		0.011 U	0.011 U	0.012 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.096 U	0.096 U	0.11 U	0.098 U	0.093 U	0.095 U	0.096 U	0.093 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.015 U	0.017 U	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0092 U	0.0092 U	0.01 U	0.0095 U	0.009 U	0.0092 U	0.0092 U	0.0089 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.012 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.014 U	0.014 U	0.015 U	0.014 U	0.013 U	0.013 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.17 U	0.19 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg		0.0087 U	0.0087 U	0.0097 U	0.0097 J	0.0085 U	0.064 J	0.04 J	0.012 J
Acenaphthylene	--	--	--	mg/kg		0.0092 U	0.0092 U	0.01 U	0.0095 U	0.009 U	0.0092 U	0.0092 U	0.0089 U
Acetophenone	780	12000	0.058	mg/kg		0.0078 U	0.0078 U	0.0087 U	0.008 U	0.0076 U	0.0078 U	0.0078 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg		0.034 U	0.034 U	0.038 U	0.035 U	0.033 U	0.1 J	0.06 J	0.033 UJ
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.016 U	0.016 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg		0.027 U	0.027 U	0.031 U	0.028 U	0.027 U	0.027 U	0.027 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.03 U	0.03 U	0.033 U	0.034 J	0.029 U	**0.43**	**0.24 J**	0.066 J
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		0.011 U	0.011 U	0.012 U	**0.044**	**0.024 J**	**0.43**	**0.25 J**	**0.073 J**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.014 U	0.014 U	0.016 U	0.052	0.03 J	**1.1**	**0.63 J**	0.086 J
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.021 U	0.021 U	0.023 U	0.034 J	0.02 U	0.45	0.26 J	0.08 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.016 U	0.016 U	0.017 U	0.025 J	0.015 U	0.38	0.19 J	0.031 J
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0084 U	0.0085 U	0.0094 U	0.0087 U	0.0083 U	0.0084 U	0.0085 U	0.0082 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.21 J	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg		0.026 U	0.026 U	0.029 U	0.027 U	0.025 U	0.026 U	0.026 U	0.025 U
Carbazole	--	--	--	mg/kg		0.0089 U	0.0089 U	0.0099 U	0.0092 U	0.0087 U	0.074 J	0.044 J	0.0086 UJ
Chrysene	**16**	290	1.2	mg/kg		0.0097 U	0.0098 U	0.011 U	0.038 J	0.026 J	0.75	0.41 J	0.085 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.019 U	0.019 U	0.021 U	0.019 U	0.018 U	**0.17**	**0.1 J**	**0.019 J**
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.02 J	0.014 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0099 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-032a	CFMW-032a	CFMW-033	CFMW-033	CFMW-033	CFMW-034	CFMW-034	CFMW-034
					Sample Date:	8/8/2016	8/8/2016	7/1/2016	7/1/2016	7/1/2016	5/31/2016	5/31/2016	5/31/2016
					Sample Depth (ft-bls):	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2
					Sample Designation:	CFMW-032a-SO-10-12	CFMW-Dup21-SO	CFMW-033-SO-0-0.5	CFMW-033-SO-0.5-2	CFMW-033-SO-10-12	CFMW-034-SO-0-0.5	CFMW-034-SO-0.5-2	CFMW-DUP10-SO
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.035 J	0.02 J	0.022 J	0.013 J	0.02 J	0.011 U	0.011 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.02 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.011 U	0.011 U	0.012 U	0.065 J	0.03 J	0.71	0.44 J	0.12 J
Fluorene	240	3000	0.54	mg/kg		0.0078 U	0.0078 U	0.0087 U	0.008 U	0.0076 U	0.044 J	0.027 J	0.0076 UJ
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.015 U	0.016 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.01 U	0.011 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0098 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.025 U	0.023 U	0.022 U	0.022 U	0.022 U	0.022 UJ
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.015 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.024 U	0.024 U	0.027 U	0.037	0.023 U	**0.47**	**0.27 J**	0.083 J
Isophorone	570	2400	0.026	mg/kg		0.0077 U	0.0077 U	0.0086 U	0.0079 U	0.0075 U	0.0076 U	0.0077 U	0.0075 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0091 U	0.0091 U	0.01 U	0.0094 U	0.0089 U	0.014 J	0.016 J	0.0088 UJ
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.033 U	0.036 U	0.033 U	0.032 U	0.032 U	0.033 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.044 U	0.048 U	0.045 U	0.042 U	0.043 U	0.043 U	0.042 U
Phenanthrene	--	--	--	mg/kg		0.0095 U	0.0096 U	0.011 U	0.06 J	0.015 J	0.45	0.28 J	0.073 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.013 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		0.016 U	0.016 U	0.018 U	0.07 J	0.034 J	0.65	0.37 J	0.13 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-034	CFMW-035	CFMW-035	CFMW-035	CFMW-035	CFMW-037	CFMW-037	CFMW-037
			Sample Date:		5/31/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/24/2016	6/24/2016	6/24/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFMW-034-SO-10-12	CFMW-035-SO-0-0.5	CFMW-DUP11-SO	CFMW-035-SO-0.5-2	CFMW-035-SO-10-12	CFMW-037-SO-0-0.5	CFMW-037-SO-0.5-2	CFMW-037-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.16 U	0.15 U	0.032 U	0.029 U	0.16 U	0.032 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.14 U	0.13 U	0.028 UJ	0.026 U	0.14 U	0.028 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.095 U	0.49 U	0.47 U	0.1 R	0.092 U	0.51 U	0.1 U	0.094 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.075 U	0.073 U	0.015 R	0.014 U	0.079 U	0.015 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 UJ	0.17 U	0.17 U	0.035 UJ	0.033 UJ	0.18 U	0.035 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 UJ	0.18 U	0.18 U	0.037 UJ	0.034 U	0.19 U	0.037 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 UJ	0.052 U	0.05 U	0.011 UJ	0.0098 U	0.055 U	0.011 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.043 U	0.042 U	0.0089 U	0.0082 U	0.045 U	0.0088 U	0.0083 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.078 U	0.4 U	0.39 U	0.083 U	0.076 U	0.42 U	0.082 U	0.078 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 UJ	1.4 U	1.3 U	0.28 UJ	0.26 UJ	1.5 U	0.28 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.072 U	0.07 U	0.015 U	0.014 U	0.076 U	0.015 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.097 U	0.094 U	0.02 U	0.018 U	0.1 U	0.02 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.041 U	0.04 U	0.0085 U	0.0078 U	0.044 U	0.0085 U	0.008 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.009 U	0.046 U	0.045 U	0.0095 U	0.0088 U	0.049 U	0.0095 U	0.009 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0078 U	0.09 J	0.054 J	0.0083 U	0.0076 U	0.096 J	0.0082 U	0.0078 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.079 U	0.077 U	0.016 U	0.015 U	0.084 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.06 U	0.059 U	0.012 U	0.011 U	0.063 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.061 U	0.06 U	0.013 UJ	0.012 UJ	0.064 U	0.013 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.048 U	0.047 U	0.01 U	0.0092 U	0.051 U	0.0099 U	0.0094 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.2 U	0.2 U	0.042 U	0.039 U	0.21 U	0.042 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.054 U	0.053 U	0.011 U	0.01 U	0.057 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 UJ	0.49 U	0.47 U	0.1 UJ	0.092 UJ	0.51 U	0.1 U	0.094 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.057 U	0.056 U	0.012 UJ	0.011 U	0.06 U	0.012 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.078 U	0.076 U	0.016 U	0.015 U	0.083 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0091 U	0.047 U	0.046 U	0.0097 U	0.0089 U	0.049 U	0.0096 U	0.0091 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.055 U	0.053 U	0.011 U	0.01 U	0.058 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.069 U	0.067 U	0.014 U	0.013 U	0.073 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.88 U	0.85 U	0.18 U	0.17 U	0.92 U	0.18 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0086 U	0.9 J	0.47 J	0.03 J	0.0084 U	0.9 J	0.013 J	0.019 J
Acenaphthylene	--	--	--	mg/kg	0.0091 U	0.047 U	0.046 U	0.0097 U	0.0089 U	0.049 U	0.0096 U	0.0091 U
Acetophenone	780	12000	0.058	mg/kg	0.0077 U	0.04 U	0.039 U	0.0082 U	0.0075 U	0.042 U	0.0081 U	0.0077 U
Anthracene	1800	23000	5.8	mg/kg	0.034 U	1.7 J	0.93 J	0.053 J	0.033 U	2	0.035 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.081 U	0.079 U	0.017 U	0.015 U	0.085 U	0.017 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.14 U	0.14 U	0.029 U	0.026 U	0.15 U	0.028 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.052	**10 J**	**5.6 J**	**0.28 J-**	0.029 U	**17**	**0.24**	0.15
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.038**	**14 J**	**7.5 J**	**0.39 J-**	0.01 U	**19**	**0.29**	**0.17**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.14	**18 J**	**9 J**	**0.49 J-**	0.013 U	**27**	**0.55**	**0.25**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.058 J	13 J	6.5 J	0.31 J+	0.02 U	21	0.36 J	0.12 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.036	**6.5**	**4.1**	0.19	0.015 U	**10**	0.2	0.11
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.057 U	0.055 U	0.012 U	0.011 U	0.06 U	0.012 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.043 U	0.042 U	0.0089 U	0.0082 U	0.045 U	0.0088 U	0.0083 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.2 J	0.069 U	0.015 U	0.013 U	2	0.14 J	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.056 U	0.055 U	0.012 U	0.011 U	5.6	0.012 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.13 U	0.13 U	0.027 UJ	0.025 U	0.14 U	0.027 UJ	0.025 UJ
Carbazole	--	--	--	mg/kg	0.0088 U	1.8 J	0.97 J	0.051 J+	0.0086 U	2.3	0.048 J	0.025 J
Chrysene	**16**	290	1.2	mg/kg	0.069 J	14 J	7.4 J	0.42 J-	0.0094 U	**21**	0.38	0.19 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.023 J**	**3 J**	**1.4 J**	**0.061 J+**	0.018 U	**5.1**	**0.065**	**0.032 J**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.24 J	0.14 J	0.011 U	0.01 U	0.25 J	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.052 U	0.05 U	0.011 U	0.0098 U	0.055 U	0.011 U	0.01 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-034	CFMW-035	CFMW-035	CFMW-035	CFMW-035	CFMW-037	CFMW-037	CFMW-037
				Sample Date:	5/31/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/24/2016	6/24/2016	6/24/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFMW-034-SO-10-12	CFMW-035-SO-0-0.5	CFMW-DUP11-SO	CFMW-035-SO-0.5-2	CFMW-035-SO-10-12	CFMW-037-SO-0-0.5	CFMW-037-SO-0.5-2	CFMW-037-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.053 U	0.052 U	0.011 U	0.01 U	0.056 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.055 U	0.053 U	0.011 U	0.01 U	0.058 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.093 U	0.09 U	0.019 U	0.018 U	0.098 U	0.019 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.058 J	20 J	11 J	0.58	0.01 U	22	0.34 J	0.24 J
Fluorene	240	3000	0.54	mg/kg	0.0077 U	0.54 J	0.31 J	0.015 J	0.0075 U	0.53 J	0.0081 U	0.014 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 UJ	0.074 U	0.072 U	0.015 UJ	0.014 U	0.078 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.051 U	0.05 U	0.011 U	0.0097 U	0.054 U	0.011 U	0.0099 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.11 U	0.11 U	0.023 U	0.022 U	0.12 U	0.023 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.067 U	0.065 U	0.014 U	0.013 U	0.07 U	0.014 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.06	**13 J**	**6.6 J**	**0.32 J+**	0.023 U	**20**	**0.28**	0.13
Isophorone	570	2400	0.026	mg/kg	0.0076 U	0.039 U	0.038 U	0.0081 U	0.0074 U	0.041 U	0.008 U	0.0076 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.009 U	0.16 J	0.1 J	0.012 J	0.0088 U	0.22 J	0.0095 U	0.009 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.057 U	0.056 U	0.012 U	0.011 U	0.06 U	0.012 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.061 U	0.06 U	0.013 U	0.012 U	0.064 U	0.013 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.17 U	0.16 U	0.034 UJ	0.031 U	0.17 U	0.034 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.043 UJ	0.22 U	0.21 U	0.045 UJ	0.042 UJ	0.23 U	0.045 U	0.043 U
Phenanthrene	--	--	--	mg/kg	0.034 J	12 J	6.4 J	0.32 J-	0.0092 U	11	0.16 J	0.15 J
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.06 U	0.058 U	0.012 U	0.011 U	0.063 U	0.012 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg	0.078 J	23 J	13 J	0.69	0.016 U	35	0.44	0.26 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-038	CFMW-038	CFMW-040	CFMW-040	CFMW-040	CFMW-042	CFMW-042
					Sample Date:	6/25/2016	6/25/2016	6/28/2016	6/28/2016	6/28/2016	6/16/2016	6/16/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-038-SO-0-0.5	CFMW-038-SO-0.5-2	CFMW-040-SO-0-0.5	CFMW-040-SO-0.5-2	CFMW-040-SO-10-12	CFMW-042-SO-0-0.5	CFMW-042-SO-0.5-2
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.03 U	0.031 U	0.03 U	0.031 U	0.031 U	0.031 U	0.045 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.027 U	0.027 U	0.026 U	0.027 U	0.027 U	0.027 U	0.039 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.095 U	0.097 U	0.094 U	0.097 U	0.096 U	0.098 U	0.14 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.015 U	0.015 U	0.014 U	0.015 U	0.015 U	0.015 U	0.022 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.034 U	0.034 U	0.033 U	0.034 U	0.034 U	0.034 U	0.049 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.035 U	0.036 U	0.035 U	0.036 U	0.036 U	0.036 U	0.052 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.015 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0084 U	0.0085 U	0.0083 U	0.0086 U	0.0085 U	0.0086 U	0.012 U	0.0089 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.078 U	0.08 U	0.077 U	0.08 U	0.079 U	0.08 U	0.12 U	0.083 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.27 U	0.27 U	0.26 U	0.27 U	0.27 U	0.28 U	0.4 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.021 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.028 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0081 U	0.0082 U	0.0079 U	0.0082 U	0.0081 U	0.0083 U	0.012 U	0.0085 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0091 U	0.0092 U	0.0089 U	0.0092 U	0.0091 U	0.0093 U	0.013 U	0.0095 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0079 U	0.008 U	0.0077 U	0.031 J	0.0079 U	0.0081 U	0.022 J	0.0083 U
2-Methylphenol	320	4100	0.075	mg/kg		0.016 U	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U	0.023 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.017 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.018 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0095 U	0.0096 U	0.0093 U	0.0097 U	0.0096 U	0.0097 U	0.014 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.04 U	0.04 U	0.039 U	0.04 U	0.04 U	0.041 U	0.058 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg		0.011 U	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.016 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.095 U	0.097 U	0.093 U	0.097 U	0.096 U	0.098 U	0.14 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.016 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.016 U	0.015 U	0.016 U	0.015 U	0.016 U	0.022 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0092 U	0.0094 U	0.013 U	0.0097 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.016 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.013 U	0.014 U	0.013 U	0.014 U	0.014 U	0.014 U	0.02 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.18 U	0.25 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg		0.0086 U	0.0088 U	0.0085 U	0.14 J	0.0093 J	0.0088 U	0.11 J	0.0091 U
Acenaphthylene	--	--	--	mg/kg		0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0092 U	0.0094 U	0.013 U	0.0097 U
Acetophenone	780	12000	0.058	mg/kg		0.0078 U	0.0079 U	0.0076 U	0.0079 U	0.0078 U	0.008 U	0.011 U	0.0082 U
Anthracene	1800	23000	5.8	mg/kg		0.034 U	0.034 U	0.033 U	0.26 J	0.034 U	0.035 U	0.2 J	0.036 U
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.023 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg		0.027 U	0.028 U	0.027 U	0.028 U	0.027 U	0.028 U	0.04 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.11	0.03 U	0.13	**1.7**	0.03 U	0.053	**1**	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**0.13**	0.011 U	**0.16**	**2.3**	**0.017 J**	**0.063**	**1.3**	0.016 J
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**0.21**	0.014 U	**0.28**	**5.1**	0.039	0.15	**2.4**	0.021 J
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.11 J	0.021 U	0.17 J	4.4	0.025 J	0.1 J	1.7	0.022 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.07	0.016 U	0.088	**1.9**	0.016 U	0.047	0.87	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.016 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0084 U	0.0085 U	0.0083 U	0.0086 U	0.0085 U	0.0086 U	0.012 U	0.0089 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.014 U	0.014 U	0.094 J	0.014 U	0.014 U	0.049 J	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.011 U	0.011 U	0.038 J	0.011 U	0.011 U	0.04 J	0.012 U
Caprolactam	3100	40000	0.25	mg/kg		0.026 UJ	0.026 UJ	0.025 UJ	0.026 U	0.026 U	0.026 U	0.038 U	0.027 U
Carbazole	--	--	--	mg/kg		0.0088 U	0.009 U	0.0087 U	0.78	0.0089 U	0.019 J	0.23 J	0.0093 U
Chrysene	**16**	290	1.2	mg/kg		0.15 J	0.0099 U	0.19 J	2.9	0.019 J	0.09 J	1.6	0.017 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.019 U	0.019 U	**0.038**	**0.85**	0.019 U	**0.019 J**	**0.39**	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.011 U	0.011 U	0.011 U	0.059 J	0.011 U	0.011 U	0.049 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.015 U	0.011 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-038	CFMW-038	CFMW-040	CFMW-040	CFMW-040	CFMW-042	CFMW-042
					Sample Date:	6/25/2016	6/25/2016	6/28/2016	6/28/2016	6/28/2016	6/16/2016	6/16/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-038-SO-0-0.5	CFMW-038-SO-0.5-2	CFMW-040-SO-0-0.5	CFMW-040-SO-0.5-2	CFMW-040-SO-10-12	CFMW-042-SO-0-0.5	CFMW-042-SO-0.5-2
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.011 U	0.01 U	0.011 U	0.01 U	0.011 U	0.015 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.01 U	0.027 J	0.011 U	0.011 J	0.016 J	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.027 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.15 J	0.011 U	0.2 J	3	0.022 J	0.085 J	1.8	0.034 J
Fluorene	240	3000	0.54	mg/kg		0.0078 U	0.0079 U	0.0076 U	0.11 J	0.0078 U	0.008 U	0.091 J	0.0082 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.015 U	0.014 U	0.015 U	0.015 U	0.015 U	0.021 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.015 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.023 U	0.022 U	0.023 U	0.022 U	0.023 U	0.033 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.019 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.1	0.024 U	0.15	**3.6**	0.028 J	0.1	**1.8**	0.025 U
Isophorone	570	2400	0.026	mg/kg		0.0077 U	0.0078 U	0.0075 U	0.0078 U	0.0077 U	0.0079 U	0.011 U	0.0081 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0091 U	0.0092 U	0.0089 U	0.056 J	0.0091 U	0.0093 U	0.055 J	0.0095 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.016 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.018 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.033 U	0.032 U	0.033 U	0.033 U	0.033 U	0.048 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.044 U	0.042 U	0.044 U	0.043 U	0.044 U	0.063 U	0.045 U
Phenanthrene	--	--	--	mg/kg		0.068 J	0.0096 U	0.082 J	1.4	0.012 J	0.037 J	1.1	0.027 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.017 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.17 J	0.016 U	0.23 J	3	0.023 J	0.086 J	2.1	0.024 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-042	CFMW-042	CFMW-043	CFMW-043	CFMW-043	CFMW-044a	CFMW-044a	CFMW-044a
				Sample Date:	6/16/2016	6/16/2016	6/15/2016	6/15/2016	6/15/2016	7/20/2016	7/20/2016	7/20/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFMW-DUP16-SO	CFMW-042-SO-10-12	CFMW-043-SO-0-0.5	CFMW-043-SO-0.5-2	CFMW-043-SO-10-12	CFMW-044a-SO-0-0.5	CFMW-044a-SO-0.5-2	CFMW-044a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.029 U	0.029 U	0.031 U	0.033 U	0.029 U	0.032 U	0.03 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.025 U	0.027 U	0.029 U	0.026 U	0.028 U	0.026 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.092 U	0.091 U	0.098 U	0.1 U	0.092 U	0.1 U	0.094 U	0.095 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.015 U	0.016 U	0.014 U	0.015 U	0.014 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.032 U	0.032 UJ	0.035 U	0.036 U	0.032 U	0.035 U	0.033 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.034 U	0.034 UJ	0.037 U	0.038 U	0.034 U	0.037 U	0.035 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0098 U	0.0097 U	0.01 U	0.011 U	0.0098 U	0.011 U	0.01 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0081 U	0.0081 U	0.0087 U	0.0091 U	0.0081 U	0.0088 U	0.0083 U	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.076 U	0.075 U	0.081 U	0.085 U	0.076 U	0.082 U	0.077 U	0.078 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.26 UJ	0.28 U	0.29 U	0.26 U	0.28 U	0.27 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.018 U	0.02 U	0.021 U	0.018 U	0.02 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0078 U	0.0078 U	0.0084 U	0.0087 U	0.0078 U	0.0085 U	0.008 U	0.0081 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0088 U	0.0087 U	0.0094 U	0.0098 U	0.0088 U	0.0095 U	0.009 U	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0076 U	0.021 J	0.11 J	0.085 J	0.078 J	0.0083 U	0.0078 U	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.016 U	0.017 U	0.015 U	0.016 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.011 UJ	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0092 U	0.0091 U	0.0098 U	0.01 U	0.0092 U	0.01 U	0.0094 U	0.0095 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.038 U	0.038 U	0.041 U	0.043 U	0.038 U	0.042 U	0.039 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.092 U	0.091 UJ	0.098 U	0.1 U	0.092 U	0.1 U	0.094 U	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.016 U	0.017 U	0.015 U	0.016 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0089 U	0.0088 U	0.0095 U	0.0099 U	0.0089 U	0.0096 U	0.0091 U	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.012 U	0.01 U	0.011 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.014 U	0.015 U	0.013 U	0.014 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.16 U	0.18 U	0.19 U	0.17 U	0.18 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0083 U	0.0083 U	0.28 J	0.0093 U	0.0083 U	0.009 U	0.0085 U	0.0086 U
Acenaphthylene	--	--	--	mg/kg	0.0089 U	0.0088 U	0.013 J	0.0099 U	0.0089 U	0.0096 U	0.0091 U	0.0092 U
Acetophenone	780	12000	0.058	mg/kg	0.0075 U	0.0074 U	0.008 U	0.0084 U	0.0075 U	0.0081 U	0.0077 U	0.0078 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.032 U	0.93	0.037 U	0.033 U	0.036 U	0.033 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.015 U	0.016 U	0.017 U	0.015 U	0.017 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 U	0.026 U	0.028 U	0.029 U	0.026 U	0.093 J	0.027 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	0.029 U	**3**	0.044	0.029 U	0.031 U	0.029 U	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.015 J	0.01 U	**3.7**	**0.05**	0.01 U	**0.033 J**	0.011 U	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.02 J	0.013 U	**4.5**	0.066	0.013 U	0.03 J	0.014 U	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.02 U	4.4	0.031 J	0.02 U	0.035 J	0.02 U	0.02 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.015 U	**2.1**	0.03 J	0.015 U	0.016 J	0.015 U	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0081 U	0.0081 U	0.0087 U	0.0091 U	0.0081 U	0.0088 U	0.0083 U	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.013 U	0.013 U	0.055 J	0.015 U	0.013 U	0.015 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.045 J	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.025 U	0.027 U	0.028 U	0.025 U	0.027 U	0.025 U	0.026 U
Carbazole	--	--	--	mg/kg	0.0086 U	0.0085 U	0.86	0.0096 U	0.0085 U	0.0093 U	0.0087 U	0.0088 U
Chrysene	**16**	290	1.2	mg/kg	0.017 J	0.0093 U	4	0.05 J	0.0094 U	0.037 J	0.0096 U	0.0097 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.018 U	**1**	0.02 U	0.018 U	0.019 U	0.018 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.01 U	0.01 U	0.15 J	0.012 U	0.01 U	0.011 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0098 U	0.0097 U	0.01 U	0.011 U	0.0098 U	0.011 U	0.01 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-042	CFMW-042	CFMW-043	CFMW-043	CFMW-043	CFMW-044a	CFMW-044a	CFMW-044a
					Sample Date:	6/16/2016	6/16/2016	6/15/2016	6/15/2016	6/15/2016	7/20/2016	7/20/2016	7/20/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFMW-DUP16-SO	CFMW-042-SO-10-12	CFMW-043-SO-0-0.5	CFMW-043-SO-0.5-2	CFMW-043-SO-10-12	CFMW-044a-SO-0-0.5	CFMW-044a-SO-0.5-2	CFMW-044a-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.0099 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.01 U	0.01 U	0.011 U	0.012 U	0.01 U	0.011 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.017 U	0.019 U	0.02 U	0.018 U	0.019 U	0.018 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.039 J	0.01 U	8.1	0.079 J	0.01 U	0.038 J	0.01 U	0.011 U
Fluorene	240	3000	0.54	mg/kg		0.0075 U	0.0074 U	0.29 J	0.01 J	0.0075 U	0.0081 U	0.0077 U	0.0078 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.015 U	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0097 U	0.0096 U	0.01 U	0.011 U	0.0097 U	0.011 U	0.0099 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.021 U	0.021 U	0.023 U	0.024 U	0.021 U	0.023 U	0.022 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.014 U	0.013 U	0.014 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.023 U	0.023 U	**4.5**	0.034 J	0.023 U	0.028 J	0.023 U	0.024 U
Isophorone	570	2400	0.026	mg/kg		0.0074 U	0.0073 U	0.0079 U	0.0083 U	0.0074 U	0.008 U	0.0076 U	0.0077 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0088 U	0.022 J	0.15 J	0.1 J	0.086 J	0.0095 U	0.009 U	0.0091 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.011 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.031 U	0.031 UJ	0.033 U	0.035 U	0.031 U	0.034 U	0.032 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.042 U	0.041 UJ	0.045 U	0.047 U	0.042 U	0.045 U	0.043 U	0.043 U
Phenanthrene	--	--	--	mg/kg		0.031 J	0.0091 U	6.4	0.046 J	0.0092 U	0.022 J	0.0094 U	0.0095 U
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.012 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.029 J	0.016 U	7.4	0.072 J	0.016 U	0.044 J	0.016 U	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-045a	CFMW-045a	CFMW-045a	CFMW-047	CFMW-047	CFMW-047	CFMW-049
				Sample Date:	8/12/2016	8/12/2016	8/12/2016	6/21/2016	6/21/2016	6/21/2016	8/20/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-045a-SO-0-0.5	CFMW-045a-SO-0.5-2	CFMW-045a-SO-10-12	CFMW-047-SO-0-0.5	CFMW-047-SO-0.5-2	CFMW-047-SO-10-12	CFMW-049-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.064 U	0.031 U	0.029 U	0.03 U	0.032 U	0.03 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.056 U	0.027 U	0.025 U	0.027 U	0.028 U	0.026 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.2 U	0.097 U	0.092 U	0.095 U	0.1 U	0.093 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.031 U	0.015 U	0.014 U	0.015 U	0.016 U	0.014 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.071 U	0.034 U	0.032 U	0.034 U	0.036 U	0.033 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.075 U	0.036 U	0.034 U	0.036 U	0.038 U	0.035 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.021 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.0099 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.018 U	0.0085 U	0.0081 U	0.0084 U	0.0089 U	0.0082 U	0.0088 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.17 U	0.079 U	0.075 U	0.078 U	0.083 U	0.077 U	0.082 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.57 U	0.27 U	0.26 U	0.27 U	0.29 U	0.26 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.03 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.04 U	0.019 U	0.018 U	0.019 U	0.02 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.017 U	0.0082 U	0.0078 U	0.0081 U	0.0086 U	0.0079 U	0.0085 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.019 U	0.0092 U	0.0087 U	0.0091 U	0.0096 U	0.0089 U	0.0095 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.15 J	0.11 J	0.0076 U	0.0079 U	0.0084 U	0.0077 U	0.0083 U
2-Methylphenol	320	4100	0.075	mg/kg	0.033 U	0.016 U	0.015 U	0.016 U	0.017 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.025 U	0.012 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.025 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.02 U	0.0096 U	0.0091 U	0.0095 U	0.01 U	0.0093 U	0.0099 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.084 U	0.04 U	0.038 U	0.04 U	0.042 U	0.039 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg	0.022 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.2 U	0.096 U	0.091 U	0.095 U	0.1 U	0.093 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.024 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.032 U	0.016 U	0.015 U	0.015 U	0.016 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.019 U	0.0093 U	0.0088 U	0.0092 U	0.0098 U	0.009 U	0.0096 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.023 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.028 U	0.014 U	0.013 U	0.013 U	0.014 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.36 U	0.17 U	0.16 U	0.17 U	0.18 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.46 J	0.54	0.0083 U	0.011 J	0.0092 U	0.0084 U	0.009 U
Acenaphthylene	--	--	--	mg/kg	0.039 J	0.0093 U	0.0088 U	0.0092 U	0.0098 U	0.009 U	0.0096 U
Acetophenone	780	12000	0.058	mg/kg	0.016 U	0.0079 U	0.0075 U	0.0078 U	0.0083 U	0.0076 U	0.0081 U
Anthracene	1800	23000	5.8	mg/kg	1	0.68	0.033 U	0.034 U	0.036 U	0.033 U	0.035 U
Atrazine	2.4	10	0.0002	mg/kg	0.033 U	0.016 U	0.015 U	0.016 U	0.017 U	0.015 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.057 U	0.028 U	0.026 U	0.027 U	0.029 U	0.027 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**4.7**	**1.8**	0.074	**0.18**	0.032 U	0.029 U	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**5.7**	**2.1**	**0.09**	**0.23**	**0.03 J**	0.011 U	**0.11**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**9.2**	**3.5**	**0.19**	**0.33**	0.054	0.014 U	**0.21**
Benzo[g,h,i]perylene	--	--	--	mg/kg	7.5	2.2	0.091 J	0.34 J	0.048 J	0.02 U	0.18 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**3.8**	1.4	0.075	0.12	0.017 U	0.015 U	0.071
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.023 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.018 U	0.0085 U	0.0081 U	0.0084 U	0.0089 U	0.0082 U	0.0088 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.14 J	0.035 J	0.013 U	0.33 J	0.015 U	0.014 U	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.63 J+	0.18 J	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.054 U	0.026 U	0.025 U	0.026 U	0.027 U	0.025 U	0.027 U
Carbazole	--	--	--	mg/kg	1.4	0.41	0.014 J	0.023 J	0.0094 U	0.0086 U	0.0093 U
Chrysene	**16**	290	1.2	mg/kg	6.8	2.5	0.13 J	0.27 J	0.035 J	0.0095 U	0.18 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**1.4**	**0.51**	0.018 U	**0.079**	0.02 U	0.018 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.29 J	0.22 J	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.021 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.0099 U	0.011 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-045a	CFMW-045a	CFMW-045a	CFMW-047	CFMW-047	CFMW-047	CFMW-049
				Sample Date:	8/12/2016	8/12/2016	8/12/2016	6/21/2016	6/21/2016	6/21/2016	8/20/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-045a-SO-0-0.5	CFMW-045a-SO-0.5-2	CFMW-045a-SO-10-12	CFMW-047-SO-0-0.5	CFMW-047-SO-0.5-2	CFMW-047-SO-10-12	CFMW-049-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
Dimethyl phthalate	--	--	--	mg/kg	0.022 U	0.01 U	0.0099 U	0.01 U	0.011 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.039 J	0.011 U	0.01 U	0.044 J	0.011 U	0.034 J	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.038 U	0.018 U	0.017 U	0.018 U	0.019 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg	9	3.9	0.17 J	0.27 J	0.039 J	0.01 U	0.086 J
Fluorene	240	3000	0.54	mg/kg	0.44 J	0.43	0.0075 U	0.0078 U	0.0083 U	0.0076 U	0.0081 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.031 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.021 U	0.01 U	0.0096 U	0.01 U	0.011 U	0.0098 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.047 U	0.023 U	0.021 U	0.022 U	0.024 U	0.022 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.028 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**6**	**2.2**	0.078	**0.32**	0.026 J	0.023 U	0.15
Isophorone	570	2400	0.026	mg/kg	0.016 U	0.0078 U	0.0074 U	0.0077 U	0.0081 U	0.0075 U	0.008 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.75	0.26 J	0.0087 U	0.0091 U	0.0096 U	0.0089 U	0.0095 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.024 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.025 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.068 U	0.033 U	0.031 U	0.032 U	0.034 U	0.032 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.091 U	0.044 U	0.041 U	0.043 U	0.046 U	0.042 U	0.045 U
Phenanthrene	--	--	--	mg/kg	6	3.4	0.065 J	0.13 J	0.026 J	0.0093 U	0.047 J
Phenol	1900	25000	0.33	mg/kg	0.025 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg	9.9	4.6	0.16 J	0.3 J	0.043 J	0.016 U	0.11 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-049a	CFMW-049a	CFMW-050	CFMW-050	CFMW-050	CFMW-050	CFMW-053a	CFMW-053a
					Sample Date:	8/20/2016	8/20/2016	6/22/2016	6/22/2016	6/22/2016	6/22/2016	8/17/2016	8/17/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5
					Sample Designation:	CFMW-049a-SO-0.5-2	CFMW-049a-SO-10-12	CFMW-050-SO-0-0.5	CFMW-050-SO-0.5-2	CFMW-DUP17-SO	CFMW-050-SO-10-12	CFMW-DUP22-SO	CFMW-053a-SO-0-0.5
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.03 U	0.029 U	0.037 U	0.031 U	0.031 U	0.03 U	0.029 U	0.033 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.026 U	0.025 U	0.032 U	0.027 U	0.027 U	0.026 U	0.026 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.094 U	0.09 U	0.12 U	0.099 U	0.097 U	0.094 U	0.092 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.014 U	0.014 U	0.018 U	0.015 U	0.015 U	0.015 U	0.014 U	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.033 U	0.032 UJ	0.041 U	0.035 U	0.034 U	0.033 U	0.033 U	0.036 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.035 U	0.034 U	0.043 U	0.037 U	0.036 U	0.035 U	0.034 U	0.038 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.0096 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0083 U	0.008 U	0.01 U	0.0087 U	0.0085 U	0.0083 U	0.0082 U	0.009 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.077 U	0.074 U	0.095 U	0.081 U	0.08 U	0.078 U	0.076 U	0.084 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.26 U	0.26 UJ	0.33 U	0.28 U	0.27 U	0.27 UJ	0.26 U	0.29 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.013 U	0.017 U	0.015 U	0.014 U	0.014 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.019 U	0.018 U	0.023 U	0.02 U	0.019 U	0.019 U	0.018 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0079 U	0.0077 U	0.0098 U	0.0084 U	0.0082 U	0.008 U	0.0078 U	0.0086 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0089 U	0.0086 U	0.011 U	0.0094 U	0.0092 U	0.009 U	0.0088 U	0.0097 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0077 U	0.0075 U	0.01 J	0.0081 U	0.008 U	0.0078 U	0.0076 U	0.0084 U
2-Methylphenol	320	4100	0.075	mg/kg		0.015 U	0.015 U	0.019 U	0.016 U	0.016 U	0.015 U	0.015 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg		0.012 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0093 U	0.009 U	0.036 J	0.0098 U	0.0096 U	0.0094 U	0.0092 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.039 U	0.038 U	0.048 U	0.041 U	0.04 U	0.039 U	0.039 U	0.043 U
3-Nitroaniline	--	--	--	mg/kg		0.01 U	0.01 U	0.013 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.093 U	0.09 UJ	0.12 U	0.098 U	0.097 U	0.094 UJ	0.092 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.015 U	0.019 U	0.016 U	0.016 U	0.015 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.009 U	0.0087 U	0.011 U	0.0095 U	0.0093 U	0.0091 U	0.0089 U	0.0098 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.01 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.013 U	0.013 U	0.016 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.16 U	0.21 U	0.18 U	0.17 U	0.17 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg		0.0085 U	0.0082 U	0.014 J	0.0089 U	0.0088 U	0.0085 U	0.0084 UJ	0.015 J
Acenaphthylene	--	--	--	mg/kg		0.009 U	0.0087 U	0.011 U	0.0095 U	0.0093 U	0.0091 U	0.0089 U	0.0098 U
Acetophenone	780	12000	0.058	mg/kg		0.0076 U	0.0074 U	0.0094 U	0.008 U	0.0079 U	0.0077 U	0.0075 U	0.0083 U
Anthracene	1800	23000	5.8	mg/kg		0.033 U	0.032 U	0.041 U	0.035 U	0.034 U	0.033 U	0.033 U	0.036 U
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.015 U	0.019 U	0.016 U	0.016 U	0.016 U	0.015 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg		0.027 U	0.026 U	0.033 U	0.028 U	0.028 U	0.027 U	0.026 U	0.037 J
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.029 U	0.028 U	**0.23**	0.048	0.035 J	0.029 U	0.029 U	**0.21**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		0.011 U	0.01 U	**0.32**	**0.051**	**0.037**	0.011 U	0.01 U	**0.24**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.014 U	0.013 U	**0.75**	0.11	0.081	0.014 U	0.013 UJ	**0.49**
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.02 U	0.019 U	0.4 J	0.041 J	0.03 J	0.02 U	0.02 U	0.3 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.015 U	0.015 UJ	0.22	0.033 J	0.024 J	0.015 U	0.015 U	0.15
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0083 U	0.008 U	0.01 U	0.0087 U	0.0085 U	0.0083 U	0.0082 U	0.009 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.013 U	5.8	0.14 J	0.014 U	0.014 U	0.013 UJ	0.055 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg		0.025 U	0.024 U	0.031 U	0.027 U	0.026 U	0.025 UJ	0.025 U	0.027 U
Carbazole	--	--	--	mg/kg		0.0087 U	0.0084 U	0.036 J	0.0092 U	0.009 U	0.0087 U	0.0086 U	0.038 J
Chrysene	**16**	290	1.2	mg/kg		0.0095 U	0.0092 U	0.45	0.069 J	0.059 J	0.0096 U	0.0094 UJ	0.34 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.018 U	0.018 U	**0.088**	0.019 U	0.019 U	0.018 U	0.018 U	**0.048**
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.011 U	0.01 U	0.013 U	0.011 U	0.011 U	0.011 U	0.01 U	0.012 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.0096 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.011 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-049a	CFMW-049a	CFMW-050	CFMW-050	CFMW-050	CFMW-050	CFMW-053a	CFMW-053a
					Sample Date:	8/20/2016	8/20/2016	6/22/2016	6/22/2016	6/22/2016	6/22/2016	8/17/2016	8/17/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5
					Sample Designation:	CFMW-049a-SO-0.5-2	CFMW-049a-SO-10-12	CFMW-050-SO-0-0.5	CFMW-050-SO-0.5-2	CFMW-DUP17-SO	CFMW-050-SO-10-12	CFMW-DUP22-SO	CFMW-053a-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.0098 U	0.013 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.01 U	0.01 U	0.013 U	0.02 J	0.037 J	0.011 U	0.01 UJ	0.021 J
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.017 U	0.022 U	0.019 U	0.018 U	0.018 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.01 U	0.01 UJ	0.45	0.076 J	0.07 J	0.01 U	0.01 J	0.37 J
Fluorene	240	3000	0.54	mg/kg		0.0076 U	0.0074 U	0.0094 U	0.008 U	0.0079 U	0.0077 U	0.0075 U	0.012 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.017 U	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0099 U	0.0095 U	0.012 U	0.01 U	0.01 U	0.0099 U	0.0097 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.021 UJ	0.027 U	0.023 U	0.023 U	0.022 U	0.022 U	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.012 U	0.016 U	0.014 U	0.013 U	0.013 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.023 U	0.022 U	**0.42**	0.049	0.033 J	0.023 U	0.023 U	**0.29**
Isophorone	570	2400	0.026	mg/kg		0.0075 U	0.0073 U	0.046 J	0.0079 U	0.0078 U	0.0076 U	0.0074 U	0.0082 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0089 U	0.0086 U	0.02 J	0.0094 U	0.0092 U	0.009 U	0.0088 U	0.015 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.031 U	0.039 U	0.033 U	0.033 U	0.032 UJ	0.031 U	0.035 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.042 U	0.041 UJ	0.052 U	0.045 U	0.044 U	0.043 UJ	0.042 U	0.046 U
Phenanthrene	--	--	--	mg/kg		0.0093 U	0.009 U	0.2 J	0.046 J	0.04 J	0.0094 U	0.0092 UJ	0.19 J
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.016 U	0.015 U	0.43	0.073 J	0.061 J	0.016 U	0.016 U	0.36 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-053a	CFMW-053a	CFMW-054	CFMW-054	CFMW-054	CFMW-056a	CFMW-056a	CFMW-056a
				Sample Date:	8/17/2016	8/17/2016	6/20/2016	6/20/2016	6/20/2016	7/15/2016	7/15/2016	7/15/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-053a-SO-0.5-2	CFMW-053a-SO-10-12	CFMW-054-SO-0-0.5	CFMW-054-SO-0.5-2	CFMW-054-SO-10-12	CFMW-DUP20-SO	CFMW-056a-SO-0-0.5	CFMW-056a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.029 U	0.031 U	0.031 U	0.029 U	0.033 U	0.035 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.025 U	0.027 U	0.027 U	0.025 U	0.028 U	0.03 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.093 U	0.09 U	0.097 U	0.097 U	0.089 U	0.1 U	0.11 U	0.096 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.016 U	0.017 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.032 UJ	0.034 U	0.034 U	0.031 U	0.036 U	0.038 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.033 U	0.036 U	0.036 U	0.033 U	0.038 U	0.041 U	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.0095 U	0.011 U	0.012 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0082 U	0.0079 U	0.0085 U	0.0086 U	0.0079 U	0.009 U	0.0096 U	0.0085 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.074 U	0.08 U	0.08 U	0.074 U	0.084 U	0.09 U	0.079 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.25 R	0.27 U	0.28 U	0.25 U	0.29 U	0.31 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.015 U	0.016 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.02 U	0.022 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.0076 U	0.0082 U	0.0083 U	0.0076 U	0.0086 U	0.0093 U	0.0081 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0088 U	0.0086 U	0.0092 U	0.0092 U	0.0085 U	0.0097 U	0.01 U	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.0074 U	0.008 U	0.008 U	0.0074 U	0.0084 U	0.009 U	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.017 U	0.018 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.013 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.014 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0093 U	0.009 U	0.0096 U	0.0097 U	0.0089 U	0.01 U	0.011 U	0.0096 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.038 U	0.04 U	0.041 U	0.037 U	0.043 U	0.046 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.09 UJ	0.096 U	0.097 U	0.089 U	0.1 U	0.11 U	0.096 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.013 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.014 U	0.016 U	0.016 U	0.014 U	0.016 U	0.018 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0089 U	0.0087 U	0.0093 U	0.0094 U	0.0086 U	0.0098 U	0.01 U	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.012 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U	0.015 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.16 U	0.17 U	0.18 U	0.16 U	0.18 U	0.2 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0084 UJ	0.0081 U	0.0087 U	0.0088 U	0.0081 U	0.0092 U	0.0099 U	0.0087 U
Acenaphthylene	--	--	--	mg/kg	0.0089 U	0.0087 U	0.0093 U	0.0094 U	0.0086 U	0.0098 U	0.01 U	0.0092 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0073 U	0.0079 U	0.0079 U	0.0073 U	0.0083 U	0.0089 U	0.0078 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.032 U	0.034 U	0.035 U	0.032 U	0.036 U	0.039 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.017 U	0.018 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.026 U	0.028 U	0.028 U	0.026 U	0.029 U	0.031 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	0.028 U	0.053	0.043	0.028 U	0.056	0.076	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.015 J	0.01 U	**0.063**	**0.053**	0.01 U	**0.069**	**0.11**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.026 J	0.013 U	0.14	0.15	0.013 U	0.15	**0.24**	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.019 U	0.068 J	0.076 J	0.019 U	0.058 J	0.097 J	0.021 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.015 U	0.051	0.039	0.015 U	0.038	0.063	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.012 U	0.013 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0082 U	0.0079 U	0.0085 U	0.0086 U	0.0079 U	0.009 U	0.0096 U	0.0085 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.035 J	0.02 J	0.1 J	0.12 J	0.013 U	0.015 U	0.016 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.012 U	0.013 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.024 U	0.026 U	0.026 U	0.024 U	0.027 U	0.029 U	0.026 U
Carbazole	--	--	--	mg/kg	0.0086 U	0.0083 U	0.009 U	0.009 U	0.0083 U	0.012 J	0.016 J	0.0089 U
Chrysene	**16**	290	1.2	mg/kg	0.018 J	0.0092 U	0.098 J	0.088 J	0.0091 U	0.1 J	0.15 J	0.0098 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.018 U	0.019 U	0.019 U	0.017 U	0.02 U	**0.027 J**	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.012 U	0.012 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.0095 U	0.011 U	0.012 U	0.01 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-053a	CFMW-053a	CFMW-054	CFMW-054	CFMW-054	CFMW-056a	CFMW-056a	CFMW-056a
					Sample Date:	8/17/2016	8/17/2016	6/20/2016	6/20/2016	6/20/2016	7/15/2016	7/15/2016	7/15/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-053a-SO-0.5-2	CFMW-053a-SO-10-12	CFMW-054-SO-0-0.5	CFMW-054-SO-0.5-2	CFMW-054-SO-10-12	CFMW-DUP20-SO	CFMW-056a-SO-0-0.5	CFMW-056a-SO-0.5-2
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.0098 U	0.01 U	0.011 U	0.0097 U	0.011 U	0.012 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.027 J	0.015 J	0.042 J	0.021 J	0.019 J	0.011 U	0.012 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.017 U	0.018 U	0.018 U	0.017 U	0.019 U	0.021 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.025 J	0.01 U	0.086 J	0.059 J	0.0099 U	0.1 J	0.15 J	0.011 U
Fluorene	240	3000	0.54	mg/kg		0.0076 U	0.0073 U	0.0079 U	0.0079 U	0.0073 U	0.0083 U	0.0089 U	0.0078 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U	0.017 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0098 U	0.0095 U	0.01 U	0.01 U	0.0094 U	0.011 U	0.011 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.021 U	0.023 U	0.023 U	0.021 U	0.024 U	0.025 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.012 U	0.013 U	0.013 U	0.012 U	0.014 U	0.015 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.023 U	0.022 U	0.064	0.075	0.022 U	0.06	0.086	0.024 U
Isophorone	570	2400	0.026	mg/kg		0.0075 U	0.0072 U	0.0078 U	0.0078 U	0.0072 U	0.0082 U	0.0088 U	0.0077 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0088 U	0.0086 U	0.0092 U	0.0092 U	0.0085 U	0.0097 U	0.01 U	0.0091 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.013 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.014 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.031 U	0.033 U	0.033 U	0.03 U	0.035 U	0.037 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.042 U	0.041 UJ	0.044 U	0.044 U	0.04 U	0.046 U	0.049 U	0.043 U
Phenanthrene	--	--	--	mg/kg		0.019 J	0.009 U	0.041 J	0.03 J	0.0089 U	0.058 J	0.077 J	0.0096 U
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.024 J	0.015 U	0.096 J	0.073 J	0.015 U	0.1 J	0.16 J	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-056a	CFMW-057a	CFMW-057a	CFMW-057a	CFMW-059a	CFMW-059a	CFMW-059a
					Sample Date:	7/15/2016	7/27/2016	7/27/2016	7/27/2016	7/22/2016	7/22/2016	7/22/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFMW-056a-SO-10-12	CFMW-057a-SO-0-0.5	CFMW-057a-SO-0.5-2	CFMW-057a-SO-10-12	CFMW-059a-SO-0-0.5	CFMW-059a-SO-0.5-2	CFMW-059a-SO-10-12
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.029 U	0.031 UJ	0.03 U	0.03 U	0.034 U	0.031 U	0.029 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.026 U	0.027 UJ	0.027 U	0.026 U	0.03 U	0.027 U	0.025 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.092 U	0.099 U	0.095 U	0.095 U	0.11 U	0.098 U	0.091 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.014 U	0.015 U	0.015 U	0.015 U	0.017 U	0.015 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.032 UJ	0.035 UJ	0.034 U	0.033 U	0.038 U	0.034 U	0.032 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.034 UJ	0.037 UJ	0.035 U	0.035 U	0.04 U	0.036 U	0.034 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.0098 UJ	0.01 UJ	0.01 U	0.01 U	0.011 U	0.01 U	0.0097 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0081 U	0.0087 UJ	0.0084 U	0.0084 U	0.0095 U	0.0086 U	0.008 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.076 U	0.081 UJ	0.078 U	0.078 U	0.088 U	0.08 U	0.075 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.26 R	0.28 UJ	0.27 U	0.27 U	0.3 U	0.28 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.015 UJ	0.014 U	0.014 U	0.016 U	0.014 U	0.013 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.018 U	0.02 UJ	0.019 U	0.019 U	0.021 U	0.019 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0078 U	0.0084 UJ	0.0081 U	0.0081 U	0.0091 U	0.0083 U	0.0077 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0088 U	0.0094 UJ	0.0091 U	0.009 U	0.01 U	0.0093 U	0.0087 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0076 U	0.0081 UJ	0.0079 U	0.0079 U	0.0089 U	0.0081 U	0.0075 U
2-Methylphenol	320	4100	0.075	mg/kg		0.015 U	0.016 UJ	0.016 U	0.016 U	0.017 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg		0.011 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg		0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0092 U	0.0098 UJ	0.0095 U	0.0095 U	0.011 U	0.0097 U	0.0091 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.039 U	0.041 U	0.04 U	0.04 U	0.045 U	0.041 U	0.038 U
3-Nitroaniline	--	--	--	mg/kg		0.01 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.092 UJ	0.098 UJ	0.095 U	0.095 U	0.11 U	0.097 U	0.091 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.012 UJ	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.016 UJ	0.015 U	0.015 U	0.017 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0089 U	0.0095 U	0.0092 U	0.0092 U	0.01 U	0.0094 U	0.0088 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.01 U	0.011 UJ	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.013 U	0.014 UJ	0.013 U	0.013 U	0.015 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.18 U	0.17 U	0.17 U	0.19 U	0.18 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg		0.0084 U	0.0089 UJ	0.0086 U	0.0086 U	0.0097 U	0.0088 U	0.0082 U
Acenaphthylene	--	--	--	mg/kg		0.0089 U	0.0095 UJ	0.0092 U	0.0092 U	0.01 U	0.0094 U	0.0088 U
Acetophenone	780	12000	0.058	mg/kg		0.0075 U	0.008 UJ	0.0078 U	0.0078 U	0.0087 U	0.008 U	0.0074 U
Anthracene	1800	23000	5.8	mg/kg		0.033 U	0.035 UJ	0.034 U	0.034 U	0.038 U	0.035 U	0.032 U
Atrazine	2.4	10	0.0002	mg/kg		0.015 U	0.016 U	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg		0.026 U	0.028 UJ	0.027 U	0.027 U	0.031 U	0.028 U	0.026 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.029 U	0.031 UJ	0.03 U	0.03 U	0.034 U	0.03 U	0.028 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		0.01 U	0.011 UJ	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.013 U	0.014 UJ	0.014 U	0.014 U	0.016 U	0.014 U	0.013 U
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.02 U	0.021 U	0.02 U	0.02 U	0.023 U	0.021 U	0.02 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.015 U	0.016 UJ	0.016 U	0.016 U	0.017 U	0.016 U	0.015 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 UJ	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0081 U	0.0087 UJ	0.0084 U	0.0084 U	0.0095 U	0.0086 U	0.008 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.013 U	0.014 UJ	0.014 U	0.014 U	0.016 U	0.014 U	0.013 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.011 UJ	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg		0.025 U	0.027 UJ	0.026 U	0.026 U	0.029 U	0.026 U	0.025 U
Carbazole	--	--	--	mg/kg		0.0086 U	0.0091 UJ	0.0088 U	0.0088 U	0.01 U	0.0091 U	0.0084 U
Chrysene	**16**	290	1.2	mg/kg		0.0094 U	0.01 UJ	0.0097 U	0.0097 U	0.011 U	0.0099 U	0.0093 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.018 U	0.019 U	0.019 U	0.019 U	0.021 U	0.019 U	0.018 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.01 U	0.011 UJ	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.0098 U	0.01 UJ	0.01 U	0.01 U	0.011 U	0.01 U	0.0097 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-056a	CFMW-057a	CFMW-057a	CFMW-057a	CFMW-059a	CFMW-059a	CFMW-059a
				Sample Date:	7/15/2016	7/27/2016	7/27/2016	7/27/2016	7/22/2016	7/22/2016	7/22/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFMW-056a-SO-10-12	CFMW-057a-SO-0-0.5	CFMW-057a-SO-0.5-2	CFMW-057a-SO-10-12	CFMW-059a-SO-0-0.5	CFMW-059a-SO-0.5-2	CFMW-059a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.011 UJ	0.01 U	0.01 U	0.012 U	0.011 U	0.0099 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.01 U	0.011 J	0.011 U	0.011 U	0.012 U	0.013 J	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.019 U	0.018 U	0.018 U	0.02 U	0.019 U	0.017 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.01 U	0.011 UJ	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U
Fluorene	240	3000	0.54	mg/kg	0.0075 U	0.008 UJ	0.0078 U	0.0078 U	0.0087 U	0.008 U	0.0074 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.015 UJ	0.014 U	0.014 U	0.016 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0097 U	0.01 UJ	0.01 U	0.01 U	0.011 U	0.01 U	0.0096 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.023 U	0.022 U	0.022 U	0.025 U	0.023 U	0.021 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 UJ	0.013 U	0.013 U	0.015 U	0.013 U	0.012 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.023 U	0.025 U	0.024 U	0.024 U	0.027 U	0.024 U	0.023 U
Isophorone	570	2400	0.026	mg/kg	0.0074 U	0.0079 UJ	0.0077 U	0.0076 U	0.0086 U	0.0078 U	0.0073 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0088 U	0.0094 UJ	0.0091 U	0.009 U	0.01 U	0.0093 U	0.0087 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.012 UJ	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.031 UJ	0.033 UJ	0.032 U	0.032 U	0.036 U	0.033 U	0.031 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 UJ	0.045 UJ	0.043 U	0.043 U	0.049 U	0.044 U	0.041 U
Phenanthrene	--	--	--	mg/kg	0.0092 U	0.0098 UJ	0.0095 U	0.0095 U	0.011 U	0.0097 U	0.0091 U
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.012 UJ	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg	0.016 U	0.017 U	0.016 U	0.016 U	0.018 U	0.017 U	0.015 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-061	CFMW-061	CFMW-061	CFMW-064	CFMW-064	CFMW-064	CFSB-001	CFSB-001
				Sample Date:	7/12/2016	7/12/2016	7/12/2016	7/11/2016	7/11/2016	7/11/2016	5/25/2016	5/25/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-061-SO-0-0.5	CFMW-061-SO-0.5-2	CFMW-061-SO-10-12	CFMW-064-SO-0-0.5	CFMW-064-SO-0.5-2	CFMW-064-SO-10-12	CFSB-001-SO-0-0.5	CFSB-001-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.029 U	0.03 U	0.036 U	0.032 U	0.03 U	0.038 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.026 U	0.026 U	0.032 U	0.028 U	0.026 UJ	0.034 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.093 U	0.092 U	0.094 U	0.11 U	0.1 U	0.093 U	0.12 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.014 U	0.018 UJ	0.015 UJ	0.014 UJ	0.019 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.032 U	0.033 U	0.04 UJ	0.035 UJ	0.033 UJ	0.042 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.034 U	0.035 U	0.042 U	0.037 U	0.035 UJ	0.045 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0099 U	0.0098 U	0.01 U	0.012 U	0.011 U	0.0099 UJ	0.013 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0082 U	0.0081 U	0.0083 U	0.01 U	0.0088 U	0.0082 UJ	0.011 U	0.0088 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.076 U	0.077 U	0.094 U	0.082 U	0.077 UJ	0.099 U	0.082 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.26 U	0.27 U	0.32 U	0.28 U	0.26 UJ	0.34 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.017 U	0.015 U	0.014 U	0.018 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.018 U	0.019 U	0.023 U	0.02 U	0.019 U	0.024 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.0078 U	0.008 U	0.0097 U	0.0085 U	0.0079 U	0.01 U	0.0085 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.0088 U	0.0089 U	0.011 U	0.0095 U	0.0089 UJ	0.011 U	0.0095 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.0076 U	0.0077 U	0.0094 U	0.0082 U	0.0077 UJ	0.073 J	0.011 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.015 U	0.019 U	0.016 U	0.015 UJ	0.02 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.012 U	0.014 U	0.012 U	0.012 U	0.015 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.014 U	0.013 U	0.012 UJ	0.015 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0093 U	0.0092 U	0.0093 U	0.011 U	0.0099 U	0.0093 U	0.012 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.039 U	0.039 U	0.048 U	0.042 U	0.039 U	0.05 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.013 U	0.011 U	0.01 U	0.013 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.092 U	0.094 U	0.11 U	0.099 U	0.093 UJ	0.12 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 UJ	0.014 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.015 U	0.018 U	0.016 U	0.015 UJ	0.019 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.0089 U	0.009 U	0.011 U	0.0096 U	0.009 U	0.012 U	0.0096 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.013 U	0.011 U	0.01 UJ	0.014 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.013 U	0.016 U	0.014 U	0.013 U	0.017 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.21 U	0.18 U	0.17 U	0.22 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0084 U	0.0084 U	0.0085 U	0.024 J	0.009 U	0.0085 U	0.061 J	0.026 J
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.0089 U	0.009 U	0.011 U	0.0096 U	0.009 U	0.022 J	0.0096 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0075 U	0.0076 U	0.0093 U	0.0081 U	0.0076 UJ	0.0098 U	0.0082 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.033 U	0.033 U	0.041 U	0.035 U	0.033 U	0.16 J	0.045 J
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.015 U	0.016 U	0.019 U	0.017 U	0.016 U	0.02 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.031 J	0.026 U	0.027 U	0.033 J	0.028 U	0.027 UJ	0.034 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.072	0.064	0.029 U	**0.26**	0.031 U	0.029 UJ	**0.46**	**0.18**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.081**	**0.075**	0.014 J	**0.36**	**0.039**	**0.017 J**	**0.7**	**0.25**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.14	0.12	0.019 J	**0.62**	0.092	0.038	**1**	**0.31**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.11 J	0.092 J	0.02 U	0.46	0.061 J	0.02 J	0.6	0.37
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.049	0.049	0.015 U	0.21	0.02 J	0.015 U	0.38	0.14
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 UJ	0.014 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0082 U	0.0081 U	0.0083 U	0.01 U	0.0088 U	0.0082 UJ	0.011 U	0.0088 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.013 U	0.028 J	0.017 U	0.015 U	0.014 U	0.18 J	0.052 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.081 J	0.013 U	0.012 U	0.011 U	0.014 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.025 U	0.025 U	0.031 U	0.042 J	0.025 U	0.032 U	0.027 U
Carbazole	--	--	--	mg/kg	0.012 J	0.0086 U	0.0087 U	0.051 J	0.0093 U	0.0087 U	0.13 J	0.037 J
Chrysene	**16**	290	1.2	mg/kg	0.1 J	0.08 J	0.014 J	0.42 J	0.051 J	0.021 J-	0.77	0.28 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	**0.019 J**	0.018 U	**0.079**	0.019 U	0.018 U	**0.13**	**0.08 J+**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.01 U	0.011 U	0.013 U	0.011 U	0.011 U	0.031 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0099 U	0.0098 U	0.01 U	0.012 U	0.011 U	0.0099 U	0.013 U	0.011 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-061	CFMW-061	CFMW-064	CFMW-064	CFMW-064	CFSB-001	CFSB-001
					Sample Date:	7/12/2016	7/12/2016	7/11/2016	7/11/2016	7/11/2016	5/25/2016	5/25/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-061-SO-0-0.5	CFMW-061-SO-0.5-2	CFMW-064-SO-0-0.5	CFMW-064-SO-0.5-2	CFMW-064-SO-10-12	CFSB-001-SO-0-0.5	CFSB-001-SO-0.5-2
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.013 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.01 U	0.02 J	0.023 J	0.014 J	0.018 J	0.014 J	0.014 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.018 U	0.022 U	0.019 U	0.018 U	0.023 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.1 J	0.081 J	0.024 J	0.42 J	0.037 J	0.02 J	1	0.33 J
Fluorene	240	3000	0.54	mg/kg		0.0076 U	0.0075 U	0.0076 U	0.015 J	0.0081 U	0.0076 U	0.044 J	0.018 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.014 U	0.017 UJ	0.015 UJ	0.014 UJ	0.018 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0098 U	0.0097 U	0.0099 U	0.012 UJ	0.01 UJ	0.0098 UJ	0.013 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.022 U	0.027 U	0.023 U	0.022 U	0.028 U	0.023 UJ
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.016 U	0.014 U	0.013 UJ	0.017 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.096	0.087	0.023 U	**0.43**	0.053	0.023 U	**0.54**	**0.32 J+**
Isophorone	570	2400	0.026	mg/kg		0.0075 U	0.0074 U	0.0075 U	0.0092 U	0.008 U	0.0075 UJ	0.0097 U	0.008 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0089 U	0.0088 U	0.0089 U	0.011 U	0.0095 U	0.0089 UJ	0.044 J	0.011 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 UJ	0.014 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.014 U	0.013 U	0.012 U	0.015 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.031 U	0.032 U	0.039 U	0.034 U	0.032 U	0.041 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.042 U	0.042 U	0.042 U	0.052 UJ	0.045 UJ	0.042 UJ	0.055 U	0.045 U
Phenanthrene	--	--	--	mg/kg		0.058 J	0.048 J	0.017 J	0.21 J	0.019 J	0.01 J	0.5	0.22 J
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.011 U	0.014 U	0.012 U	0.011 UJ	0.015 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.14 J	0.11 J	0.024 J	0.56 J+	0.055 J+	0.025 J+	0.73	0.31 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-001	CFSB-002	CFSB-002	CFSB-002	CFSB-003	CFSB-003	CFSB-003	CFSB-004
				Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-001-SO-10-12	CFSB-002-SO-0-0.5	CFSB-002-SO-0.5-2	CFSB-002-SO-10-12	CFSB-003-SO-0-0.5	CFSB-003-SO-0.5-2	CFSB-003-SO-10-12	CFSB-004-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.033 U	0.034 U	0.03 U	0.037 U	0.031 U	0.03 U	1.6 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.029 U	0.03 U	0.026 U	0.032 U	0.027 U	0.026 U	1.4 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.094 U	0.1 U	0.11 U	0.095 U	0.11 U	0.097 U	0.093 U	4.9 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.016 U	0.017 U	0.015 U	0.018 U	0.015 U	0.014 U	0.76 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.036 U	0.038 U	0.033 U	0.04 U	0.034 U	0.033 U	1.7 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.039 U	0.04 U	0.035 U	0.043 U	0.036 U	0.035 U	1.8 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.011 U	0.011 U	0.01 U	0.012 U	0.01 U	0.0099 U	0.53 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0083 U	0.0092 U	0.0095 U	0.0084 U	0.01 U	0.0086 U	0.0082 U	0.44 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.085 U	0.088 U	0.078 U	0.094 U	0.08 U	0.077 U	4.1 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.29 U	0.3 U	0.27 U	0.32 U	0.27 U	0.26 U	14 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.015 U	0.016 U	0.014 U	0.017 U	0.014 U	0.014 U	0.73 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.021 U	0.021 U	0.019 U	0.023 U	0.019 U	0.019 U	0.99 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.008 U	0.0088 U	0.0091 U	0.0081 U	0.0097 U	0.0082 U	0.0079 U	0.42 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.0099 U	0.01 U	0.009 U	0.011 U	0.0092 U	0.0088 U	0.47 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0078 U	0.0086 U	0.0089 U	0.0078 U	0.0095 U	0.008 U	0.0077 U	2 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.017 U	0.017 U	0.015 U	0.019 U	0.016 U	0.015 U	0.81 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.013 U	0.013 U	0.012 U	0.014 U	0.012 U	0.011 U	0.61 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.013 U	0.013 U	0.012 U	0.014 U	0.012 U	0.012 U	0.62 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0094 U	0.01 U	0.011 U	0.0094 U	0.011 U	0.0097 U	0.0093 U	0.49 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.043 U	0.045 U	0.04 U	0.048 U	0.041 U	0.039 U	2.1 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.01 U	0.55 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.094 U	0.1 U	0.11 U	0.095 U	0.11 U	0.097 U	0.093 U	4.9 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.012 U	0.013 U	0.011 U	0.013 U	0.011 U	0.011 U	0.58 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.017 U	0.017 U	0.015 U	0.018 U	0.016 U	0.015 U	0.79 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.01 U	0.01 U	0.0091 U	0.011 U	0.0093 U	0.0089 U	0.48 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.01 U	0.55 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.015 U	0.015 U	0.013 U	0.016 U	0.014 U	0.013 U	0.7 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.19 U	0.19 U	0.17 U	0.21 U	0.17 U	0.17 U	8.9 U
Acenaphthene	360	4500	0.55	mg/kg	0.0085 U	0.018 J	0.012 J	0.0086 U	0.01 U	0.0088 U	0.0084 U	22
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.01 U	0.01 U	0.0091 U	0.011 U	0.0093 U	0.0089 U	0.54 J
Acetophenone	780	12000	0.058	mg/kg	0.0077 U	0.0084 U	0.0087 U	0.0077 U	0.0093 U	0.0079 U	0.0076 U	0.4 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.037 U	0.038 U	0.034 U	0.041 U	0.034 U	0.033 U	47
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.017 U	0.018 U	0.016 U	0.019 U	0.016 U	0.015 U	0.82 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.03 U	0.031 U	0.027 U	0.033 U	0.028 U	0.027 U	1.4 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	**0.19**	0.16	0.03 U	0.085	0.03 U	0.029 U	**100**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	**0.24**	**0.25**	0.011 U	**0.11**	**0.027 J**	0.011 U	**100**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.014 U	**0.36**	**0.59**	0.014 U	**0.19**	0.046	0.014 U	**120**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.23 J	0.32 J	0.02 U	0.1 J	0.021 J	0.02 U	62
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.15	0.2	0.015 U	0.076	0.018 J	0.015 U	**50**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.011 U	0.58 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0083 U	0.0092 U	0.0095 U	0.0084 U	0.01 U	0.0086 U	0.0082 U	0.44 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.015 U	0.016 U	0.014 U	0.017 U	0.014 U	0.014 U	0.72 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.011 U	0.57 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.028 U	0.029 U	0.026 U	0.031 U	0.026 U	0.025 U	1.3 U
Carbazole	--	--	--	mg/kg	0.0087 U	0.027 J	0.021 J	0.0088 U	0.011 J	0.009 U	0.0086 U	32
Chrysene	**16**	290	1.2	mg/kg	0.0096 U	0.28 J	0.29 J	0.0097 U	0.13 J	0.033 J	0.0095 U	**110**
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	**0.05**	**0.074**	0.018 U	**0.024 J**	0.019 U	0.018 U	**21**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.011 U	**10 J**
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.011 U	0.011 U	0.01 U	0.012 U	0.01 U	0.0099 U	0.53 U

Preliminary - Under EPA and MBCO Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-001	CFSB-002	CFSB-002	CFSB-002	CFSB-003	CFSB-003	CFSB-003	CFSB-004
					Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-001-SO-10-12	CFSB-002-SO-0-0.5	CFSB-002-SO-0.5-2	CFSB-002-SO-10-12	CFSB-003-SO-0-0.5	CFSB-003-SO-0.5-2	CFSB-003-SO-10-12	CFSB-004-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.011 U	0.012 U	0.01 U	0.012 U	0.011 U	0.01 U	0.54 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.01 U	0.55 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.02 U	0.02 U	0.018 U	0.022 U	0.018 U	0.018 U	0.94 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.01 U	0.31 J	0.25 J	0.011 J	0.14 J	0.037 J	0.01 U	240
Fluorene	240	3000	0.54	mg/kg		0.0077 U	0.0084 U	0.0087 U	0.0077 U	0.0093 U	0.0079 U	0.0076 U	19
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.016 U	0.016 U	0.014 U	0.017 U	0.015 U	0.014 U	0.75 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0099 U	0.011 U	0.011 U	0.01 U	0.012 U	0.01 U	0.0098 U	0.52 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.024 U	0.025 U	0.022 U	0.027 U	0.023 U	0.022 U	1.2 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.014 U	0.015 U	0.013 U	0.016 U	0.013 U	0.013 U	0.68 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.023 U	**0.18**	**0.25**	0.024 U	0.097	0.024 U	0.023 U	**76**
Isophorone	570	2400	0.026	mg/kg		0.0076 U	0.0083 U	0.0086 U	0.0076 U	0.0092 U	0.0078 U	0.0075 U	0.4 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0089 U	0.0099 U	0.01 U	0.009 U	0.011 U	0.0092 U	0.0088 U	**4.6 J**
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.012 U	0.013 U	0.011 U	0.013 U	0.011 U	0.011 U	0.58 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.013 U	0.013 U	0.012 U	0.014 U	0.012 U	0.012 U	0.62 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.035 U	0.036 U	0.032 U	0.039 U	0.033 U	0.032 U	1.7 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.047 U	0.049 U	0.043 U	0.052 U	0.044 U	0.042 U	2.2 U
Phenanthrene	--	--	--	mg/kg		0.0094 U	0.18 J	0.12 J	0.012 J	0.071 J	0.02 J	0.0093 U	180
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.013 U	0.013 U	0.012 U	0.014 U	0.012 U	0.011 U	0.6 U
Pyrene	**180**	2300	1.3	mg/kg		0.016 U	0.35 J	0.26 J	0.016 U	0.15 J	0.038 J	0.016 U	150

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-004	CFSB-004	CFSB-005	CFSB-005	CFSB-005	CFSB-006	CFSB-006	CFSB-006
			Sample Date:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-004-SO-0.5-2	CFSB-004-SO-10-12	CFSB-005-SO-0-0.5	CFSB-005-SO-0.5-2	CFSB-005-SO-10-12	CFSB-006-SO-0-0.5	CFSB-006-SO-0.5-2	CFSB-006-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	1.6 U	0.03 U	0.034 U	0.032 U	0.03 U	0.03 U	0.035 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	1.4 U	0.026 U	0.029 U	0.028 U	0.027 U	0.027 U	0.031 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	4.9 U	0.094 U	0.11 U	0.1 U	0.095 U	0.096 U	0.11 U	0.099 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.75 U	0.014 U	0.016 U	0.015 U	0.015 U	0.015 U	0.017 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	1.7 U	0.033 U	0.037 U	0.035 U	0.034 U	0.034 U	0.039 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	1.8 U	0.035 U	0.039 U	0.037 U	0.035 U	0.036 U	0.041 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.52 U	0.01 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.43 U	0.0083 U	0.0093 U	0.0088 U	0.0084 U	0.0084 U	0.0098 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	4 U	0.077 U	0.087 U	0.082 U	0.078 U	0.079 U	0.091 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	14 U	0.27 U	0.3 U	0.28 U	0.27 U	0.27 U	0.31 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.72 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.016 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.97 U	0.019 U	0.021 U	0.02 U	0.019 U	0.019 U	0.022 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.41 U	0.008 U	0.009 U	0.0085 U	0.0081 U	0.0081 U	0.0094 U	0.0084 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.46 U	0.0089 U	0.01 U	0.0095 U	0.0091 U	0.0091 U	0.011 U	0.0094 U
2-Methylnaphthalene	24	300	0.019	mg/kg	3.9 J	0.0078 U	0.0087 U	0.0082 U	0.0079 U	0.0079 U	0.0092 U	0.0081 U
2-Methylphenol	320	4100	0.075	mg/kg	0.79 U	0.015 U	0.017 U	0.016 U	0.016 U	0.016 U	0.018 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.6 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.61 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.014 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	1 J	0.0094 U	0.011 U	0.0099 U	0.0095 U	0.0095 U	0.011 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	2 U	0.039 U	0.044 U	0.042 U	0.04 U	0.04 U	0.046 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.54 U	0.01 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	4.9 U	0.094 U	0.11 U	0.099 U	0.095 U	0.095 U	0.11 U	0.098 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.57 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.78 U	0.015 U	0.017 U	0.016 U	0.015 U	0.015 U	0.018 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.47 U	0.0091 U	0.01 U	0.0096 U	0.0092 U	0.0092 U	0.011 U	0.0095 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.55 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.69 U	0.013 U	0.015 U	0.014 U	0.013 U	0.014 U	0.016 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	8.8 U	0.17 U	0.19 U	0.18 U	0.17 U	0.17 U	0.2 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	28	0.026 J	0.025 J	0.009 U	0.0086 U	0.0086 U	0.01 U	0.0089 U
Acenaphthylene	--	--	--	mg/kg	1 J	0.0091 U	0.01 U	0.0096 U	0.0092 U	0.0092 U	0.011 U	0.0095 U
Acetophenone	780	12000	0.058	mg/kg	0.4 U	0.0077 U	0.0086 U	0.0081 U	0.0078 U	0.0078 U	0.009 U	0.008 U
Anthracene	1800	23000	5.8	mg/kg	48	0.089 J	0.042 J	0.035 U	0.034 U	0.034 U	0.039 U	0.035 U
Atrazine	2.4	10	0.0002	mg/kg	0.81 U	0.016 U	0.018 U	0.017 U	0.016 U	0.016 U	0.018 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	1.4 U	0.027 U	0.03 U	0.028 U	0.027 U	0.027 U	0.032 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**89**	**0.21**	**0.19**	0.036 J	0.03 U	0.03 U	0.051	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**75**	**0.14**	**0.23**	**0.04**	0.011 U	0.011 U	**0.055**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**100**	**0.26**	**0.36**	0.064	0.019 J	0.015 J	0.1	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	47	0.13 J	0.21 J	0.033 J	0.02 U	0.021 U	0.058 J	0.021 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**38**	0.12	0.15	0.023 J	0.016 U	0.016 U	0.037 J	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.57 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.43 U	0.0083 U	0.0093 U	0.0088 U	0.0084 U	0.0084 U	0.0098 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.71 U	0.014 U	0.015 U	0.015 U	0.047 J	0.051 J	0.016 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.56 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	1.3 U	0.025 U	0.028 U	0.027 U	0.026 U	0.026 U	0.03 U	0.027 U
Carbazole	--	--	--	mg/kg	24	0.062 J	0.033 J	0.0092 U	0.0088 U	0.0089 U	0.01 U	0.0091 U
Chrysene	**16**	290	1.2	mg/kg	**110**	0.24 J	0.26 J	0.05 J	0.013 J	0.011 J	0.069 J	0.01 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**19**	**0.037 J+**	**0.043**	0.019 U	0.019 U	0.019 U	0.022 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	**15 J**	0.022 J	0.012 U	0.011 U	0.011 U	0.011 U	0.013 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.52 U	0.01 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-004	CFSB-005	CFSB-005	CFSB-005	CFSB-006	CFSB-006	CFSB-006
					Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-004-SO-0.5-2	CFSB-004-SO-10-12	CFSB-005-SO-0-0.5	CFSB-005-SO-0.5-2	CFSB-005-SO-10-12	CFSB-006-SO-0-0.5	CFSB-006-SO-0.5-2	CFSB-006-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.53 U	0.01 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.55 U	0.011 U	0.012 U	0.011 U	0.011 U	0.017 J	0.012 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.93 U	0.018 U	0.02 U	0.019 U	0.018 U	0.018 U	0.021 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		240	0.5	0.34 J	0.055 J	0.014 J	0.014 J	0.081 J	0.011 U
Fluorene	240	3000	0.54	mg/kg		25	0.042 J	0.02 J	0.0081 U	0.0078 U	0.0078 U	0.009 U	0.008 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.74 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.017 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.51 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.01 U	0.012 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		1.1 U	0.022 UJ	0.025 U	0.023 U	0.022 U	0.022 UJ	0.026 UJ	0.023 UJ
Hexachloroethane	1.8	8	0.0002	mg/kg		0.67 U	0.013 U	0.014 U	0.014 U	0.013 U	0.013 U	0.015 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**57**	0.15 J+	**0.2**	0.03 J	0.024 U	0.024 U	0.058 J+	0.025 U
Isophorone	570	2400	0.026	mg/kg		1.4 J	0.0076 U	0.0085 U	0.008 U	0.0077 U	0.0077 U	0.012 J	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg		**10 J**	0.0089 U	0.01 U	0.0095 U	0.0091 U	0.0091 U	0.011 U	0.0094 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.57 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.61 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.014 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		1.7 U	0.032 U	0.036 U	0.034 U	0.032 U	0.032 U	0.038 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg		2.2 U	0.043 U	0.048 U	0.045 U	0.043 U	0.043 U	0.05 U	0.045 U
Phenanthrene	--	--	--	mg/kg		240	0.49	0.21 J	0.032 J	0.013 J	0.018 J	0.037 J	0.0098 U
Phenol	1900	25000	0.33	mg/kg		1.2 J	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		130	0.44	0.36 J	0.054 J	0.016 U	0.016 U	0.084 J	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-007	CFSB-007	CFSB-007	CFSB-008	CFSB-008	CFSB-008	CFSB-008	CFSB-009
			Sample Date:		5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-007-SO-0-0.5	CFSB-007-SO-0.5-2	CFSB-007-SO-10-12	CFSB-008-SO-0-0.5	CFSB-008-SO-0.5-2	CFSB-DUP4-SO	CFSB-008-SO-10-12	CFSB-009-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.032 U	0.03 U	0.034 U	0.032 U	0.033 U	0.03 U	0.036 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.028 U	0.026 U	0.03 U	0.028 U	0.029 U	0.026 U	0.032 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.1 U	0.093 U	0.11 U	0.1 U	0.1 U	0.093 U	0.11 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.014 U	0.017 U	0.016 U	0.016 U	0.014 U	0.017 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.035 U	0.033 U	0.038 U	0.036 U	0.036 U	0.033 U	0.04 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.037 U	0.035 U	0.04 U	0.038 U	0.038 U	0.035 U	0.042 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.011 U	0.0099 U	0.011 U	0.011 U	0.011 U	0.0099 U	0.012 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0089 U	0.0089 U	0.0082 U	0.0095 U	0.009 U	0.009 U	0.0082 U	0.01 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.083 U	0.083 U	0.077 U	0.088 U	0.084 U	0.084 U	0.076 U	0.093 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.28 U	0.26 U	0.3 UJ	0.29 U	0.29 U	0.26 U	0.32 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.015 U	0.014 U	0.016 U	0.015 U	0.015 U	0.014 U	0.017 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.02 U	0.019 U	0.021 U	0.02 U	0.02 U	0.018 U	0.023 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0085 U	0.0085 U	0.0079 U	0.0091 U	0.0086 U	0.0087 U	0.0079 U	0.0096 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0096 U	0.0096 U	0.0089 U	0.01 U	0.0097 U	0.0097 U	0.0088 U	0.011 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0083 U	0.0083 U	0.0077 U	0.0089 U	0.0084 U	0.0085 U	0.0077 U	0.0094 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.015 U	0.017 U	0.017 U	0.017 U	0.015 U	0.018 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.011 U	0.013 U	0.013 U	0.013 U	0.011 U	0.014 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.013 U	0.012 U	0.013 U	0.013 U	0.013 U	0.012 U	0.014 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.01 U	0.01 U	0.0093 U	0.011 U	0.01 U	0.01 U	0.0092 U	0.026 J
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.042 U	0.039 U	0.045 U	0.042 U	0.043 U	0.039 U	0.047 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U	0.01 U	0.013 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.1 U	0.093 U	0.11 UJ	0.1 U	0.1 U	0.093 U	0.11 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.012 U	0.011 U	0.013 U	0.012 U	0.012 U	0.011 U	0.013 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	0.015 U	0.017 U	0.016 U	0.016 U	0.015 U	0.018 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0097 U	0.0097 U	0.009 U	0.01 U	0.0098 U	0.0099 U	0.0089 U	0.011 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U	0.01 U	0.013 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.013 U	0.015 U	0.014 U	0.014 U	0.013 U	0.016 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.18 U	0.17 U	0.19 U	0.18 U	0.18 U	0.17 U	0.2 U
Acenaphthene	360	4500	0.55	mg/kg	0.029 J	0.064 J	0.0084 U	0.0097 U	0.0092 U	0.0093 U	0.0084 U	0.01 U
Acenaphthylene	--	--	--	mg/kg	0.0097 U	0.0097 U	0.009 U	0.01 U	0.0098 U	0.0099 U	0.0089 U	0.011 U
Acetophenone	780	12000	0.058	mg/kg	0.0082 U	0.0082 U	0.0076 U	0.0087 U	0.0083 U	0.0084 U	0.0076 U	0.0092 U
Anthracene	1800	23000	5.8	mg/kg	0.093 J	0.14 J	0.033 U	0.038 U	0.036 U	0.036 U	0.033 U	0.04 U
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.017 U	0.015 U	0.018 U	0.017 U	0.017 U	0.015 U	0.019 U
Benzaldehyde	170	820	0.0041	mg/kg	0.029 U	0.029 U	0.027 U	0.031 UJ	0.029 U	0.029 U	0.026 U	0.032 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.41**	**0.27**	0.029 U	0.034 U	0.07 J	0.032 UJ	0.029 U	0.077
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.44**	**0.27**	0.011 U	0.012 U	**0.1 J**	0.012 UJ	0.01 U	**0.095**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.84**	**0.34**	0.014 U	0.016 U	0.15 J	0.015 UJ	0.014 U	**0.19**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.48	0.15 J	0.02 U	0.023 U	0.1 J	0.022 UJ	0.02 U	0.095 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.34	0.16	0.015 U	0.017 U	0.062 J	0.017 UJ	0.015 U	0.018 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.012 U	0.011 U	0.013 U	0.012 U	0.012 U	0.011 U	0.013 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0089 U	0.0089 U	0.0082 U	0.0095 U	0.009 U	0.009 U	0.0082 U	0.01 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.015 U	0.014 U	0.016 U	0.025 J	0.015 U	0.014 U	0.017 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.027 U	0.025 U	0.029 UJ	0.027 U	0.028 U	0.025 U	0.031 U
Carbazole	--	--	--	mg/kg	0.061 J	0.089 J	0.0086 U	0.01 U	0.0097 J	0.0095 U	0.0086 U	0.012 J
Chrysene	**16**	290	1.2	mg/kg	1.3	0.3 J	0.0095 U	0.011 J	0.11 J	0.01 UJ	0.0094 U	0.13 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.13**	**0.05**	0.018 U	0.021 U	**0.027 J**	0.02 U	0.018 U	**0.023 J**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.029 J	0.011 U	0.012 U	0.012 U	0.012 U	0.01 U	0.013 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.011 U	0.0099 U	0.011 U	0.011 U	0.011 U	0.0099 U	0.012 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-007	CFSB-007	CFSB-008	CFSB-008	CFSB-008	CFSB-008	CFSB-009
					Sample Date:	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-007-SO-0-0.5	CFSB-007-SO-0.5-2	CFSB-008-SO-0-0.5	CFSB-008-SO-0.5-2	CFSB-DUP4-SO	CFSB-008-SO-10-12	CFSB-009-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U	0.01 U	0.012 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U	0.01 U	0.013 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.019 U	0.018 U	0.02 U	0.019 U	0.019 U	0.018 U	0.022 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.75	0.59	0.01 U	0.012 U	0.14 J	0.011 UJ	0.01 U	0.13 J
Fluorene	240	3000	0.54	mg/kg		0.02 J	0.063 J	0.0076 U	0.0087 U	0.0083 U	0.0084 U	0.0076 U	0.0092 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.015 U	0.014 U	0.016 U	0.015 U	0.016 U	0.014 U	0.017 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.011 U	0.011 U	0.0098 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.012 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 U	0.023 U	0.022 U	0.025 UJ	0.024 UJ	0.024 UJ	0.022 UJ	0.026 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.014 U	0.014 U	0.013 U	0.015 U	0.014 U	0.014 U	0.013 U	0.016 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**0.42**	0.16	0.023 U	0.027 U	0.11 J	0.026 UJ	0.023 U	0.092
Isophorone	570	2400	0.026	mg/kg		0.25	0.0081 U	0.0075 U	0.0086 U	0.0082 U	0.0082 U	0.0075 U	0.048 J
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0097 J	0.0096 U	0.0089 U	0.01 U	0.0097 U	0.0097 U	0.0088 U	0.011 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.012 U	0.011 U	0.013 U	0.012 U	0.012 U	0.011 U	0.013 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.013 U	0.013 U	0.012 U	0.013 U	0.013 U	0.013 U	0.012 U	0.014 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.034 U	0.034 U	0.032 U	0.036 U	0.035 U	0.035 U	0.031 U	0.038 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.046 U	0.046 U	0.042 U	0.049 UJ	0.046 U	0.046 U	0.042 U	0.051 U
Phenanthrene	--	--	--	mg/kg		0.36 J	0.56	0.0093 U	0.011 U	0.057 J	0.01 UJ	0.0092 U	0.068 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.011 U	0.013 U	0.012 U	0.013 U	0.011 U	0.014 U
Pyrene	**180**	2300	1.3	mg/kg		0.8	0.53	0.016 U	0.018 U	0.12 J	0.017 UJ	0.016 U	0.15 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-009	CFSB-009	CFSB-009	CFSB-010	CFSB-010	CFSB-011	CFSB-011	CFSB-011
				Sample Date:	5/23/2016	5/23/2016	5/24/2016	5/21/2016	5/21/2016	5/19/2016	5/19/2016	5/19/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-009-SO-0.5-2	CFSB-009-SO-10-12	CFSB-DUP6-SO	CFSB-010-SO-0.5-2	CFSB-010-SO-10-12	CFSB-011-SO-0-0.5	CFSB-011-SO-0.5-2.0	CFSB-011-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.04 U	0.04 U	0.11 J	0.029 U	0.034 U	0.031 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.035 U	0.035 U	0.027 U	0.026 U	0.029 U	0.027 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.099 U	0.12 U	0.13 U	0.097 U	0.092 U	0.11 U	0.098 U	0.098 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.019 U	0.019 U	0.015 U	0.014 U	0.016 U	0.015 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.044 U	0.044 U	0.034 U	0.033 U	0.037 U	0.034 UJ	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.046 U	0.047 U	0.036 U	0.034 U	0.039 U	0.036 UJ	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.013 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.01 UJ	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0087 U	0.011 U	0.011 U	0.0086 U	0.0082 U	0.0093 U	0.0086 UJ	0.0086 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.081 U	0.1 U	0.1 U	0.08 U	0.076 U	0.087 U	0.081 UJ	0.08 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.35 U	0.35 U	0.27 U	0.26 U	0.3 U	0.28 UJ	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.018 U	0.019 U	0.014 U	0.014 U	0.016 U	0.015 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.025 U	0.025 U	0.019 U	0.018 U	0.021 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0084 U	0.011 U	0.011 U	0.0082 U	0.0078 U	0.009 U	0.0083 U	0.0083 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0094 U	0.012 U	0.012 U	0.0092 U	0.0088 U	0.01 U	0.0093 UJ	0.0093 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0081 U	0.01 U	0.01 U	0.44	0.031 J	0.0087 U	0.0081 UJ	0.0081 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.02 U	0.02 U	0.016 U	0.015 U	0.017 U	0.016 UJ	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.015 U	0.015 U	0.012 U	0.011 U	0.013 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.016 U	0.016 U	0.012 U	0.012 U	0.013 U	0.012 UJ	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0098 U	0.012 U	0.012 U	0.033 J	0.0092 U	0.011 U	0.0097 U	0.0097 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.041 U	0.052 U	0.052 U	0.04 U	0.039 U	0.044 U	0.041 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.014 U	0.014 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.098 U	0.12 U	0.12 U	0.097 U	0.092 U	0.11 U	0.098 UJ	0.098 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.015 U	0.015 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.02 U	0.02 U	0.016 U	0.015 U	0.017 U	0.016 UJ	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0095 U	0.012 U	0.012 U	0.0093 U	0.0089 U	0.01 U	0.0094 U	0.0094 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.014 U	0.014 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.018 U	0.018 U	0.014 U	0.013 U	0.015 U	0.014 UJ	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.22 U	0.23 U	0.17 U	0.17 U	0.19 U	0.18 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0089 U	0.011 U	0.012 J	1.1	0.045 J	0.0096 U	0.0089 U	0.0089 U
Acenaphthylene	--	--	--	mg/kg	0.0095 U	0.012 U	0.012 U	0.025 J	0.0089 U	0.01 U	0.0094 U	0.0094 U
Acetophenone	780	12000	0.058	mg/kg	0.008 U	0.01 U	0.01 U	0.0079 U	0.0075 U	0.0086 U	0.008 U	0.008 U
Anthracene	1800	23000	5.8	mg/kg	0.035 U	0.044 U	0.044 U	1.5	0.067 J	0.038 U	0.035 UJ	0.035 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.021 U	0.021 U	0.016 U	0.015 U	0.018 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.035 U	0.036 U	0.028 U	0.026 U	0.03 U	0.028 UJ	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.031 U	0.039 U	0.093 J	**2.3**	**0.29**	0.041	0.031 U	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.017 J**	0.014 U	**0.12 J**	**2.1**	**0.33**	**0.045**	**0.02 J**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.041	0.018 U	**0.24 J**	**2.5**	**0.48**	0.11	0.049	0.016 J
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.021 U	0.027 U	0.14 J	1.8 J+	0.36	0.051 J	0.023 J+	0.021 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.016 U	0.02 U	0.084 J	0.99	0.15	0.033 J	0.016 U	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.014 U	0.015 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0087 U	0.011 U	0.011 U	0.0086 U	0.0082 U	0.0093 U	0.0086 U	0.0086 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.018 U	0.069 J	0.014 U	0.013 U	0.085 J	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.014 U	0.014 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.033 U	0.034 U	0.026 UJ	0.025 U	0.028 U	0.026 UJ	0.026 U
Carbazole	--	--	--	mg/kg	0.0091 U	0.012 U	0.027 J	0.75	0.053 J	0.0098 U	0.0091 UJ	0.0091 U
Chrysene	**16**	290	1.2	mg/kg	0.026 J	0.013 U	0.17 J	2.2	0.63	0.084 J	0.041 J	0.01 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.019 U	0.024 U	**0.04 J**	**0.45 J+**	**0.098**	0.021 U	0.019 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.014 U	0.014 U	0.63	0.02 J	0.012 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.013 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.01 U	0.01 U

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-009	CFSB-009	CFSB-009	CFSB-010	CFSB-010	CFSB-011	CFSB-011	CFSB-011
				Sample Date:	5/23/2016	5/23/2016	5/24/2016	5/21/2016	5/21/2016	5/19/2016	5/19/2016	5/19/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-009-SO-0.5-2	CFSB-009-SO-10-12	CFSB-DUP6-SO	CFSB-010-SO-0.5-2	CFSB-010-SO-10-12	CFSB-011-SO-0-0.5	CFSB-011-SO-0.5-2.0	CFSB-011-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.013 U	0.014 U	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.014 U	0.014 U	0.011 U	0.01 U	0.012 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.61	0.024 U	0.024 U	0.018 U	0.018 U	0.02 U	0.019 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.023 J	0.014 U	0.18 J	5.4	0.82	0.059 J	0.028 J-	0.011 U
Fluorene	240	3000	0.54	mg/kg	0.008 U	0.01 U	0.01 U	1.1	0.037 J	0.0086 U	0.008 UJ	0.008 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.019 U	0.019 U	0.015 U	0.014 U	0.016 U	0.015 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.013 U	0.013 U	0.01 U	0.0097 U	0.011 U	0.01 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.023 U	0.029 U	0.029 UJ	0.023 U	0.022 U	0.025 U	0.023 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.017 U	0.017 U	0.013 U	0.013 U	0.014 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.025 U	0.031 U	0.14 J	**2 J+**	**0.33**	0.056 J+	0.024 J	0.024 U
Isophorone	570	2400	0.026	mg/kg	0.017 J	0.01 U	0.011 J	0.0078 U	0.0074 U	0.0089 J	0.0079 U	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0094 U	0.012 U	0.012 U	1.5	0.019 J	0.01 U	0.0093 UJ	0.0093 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.015 U	0.015 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.016 U	0.016 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.033 U	0.042 U	0.042 U	0.033 U	0.031 U	0.036 U	0.033 UJ	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.045 U	0.056 U	0.057 U	0.044 U	0.042 U	0.048 U	0.044 UJ	0.044 U
Phenanthrene	--	--	--	mg/kg	0.013 J	0.012 U	0.12 J	5.8	0.5	0.036 J	0.018 J-	0.0097 U
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.015 U	0.015 U	0.021 J	0.011 U	0.013 U	0.012 UJ	0.012 U
Pyrene	**180**	2300	1.3	mg/kg	0.027 J	0.021 U	0.17 J	4.9	0.83	0.063 J	0.029 J	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-012	CFSB-012	CFSB-013	CFSB-013	CFSB-013	CFSB-014	CFSB-014	CFSB-014
				Sample Date:	5/28/2016	5/28/2016	5/19/2016	5/19/2016	5/19/2016	6/2/2016	6/2/2016	6/2/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-012-SO-0.5-2	CFSB-012-SO-10-12	CFSB-013-SO-0-0.5	CFSB-013-SO-0.5-2.0	CFSB-013-SO-10-12	CFSB-014-SO-0-0.5	CFSB-014-SO-0.5-2	CFSB-014-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.029 U	0.036 U	0.033 U	0.03 U	0.034 U	0.034 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.026 U	0.032 U	0.028 U	0.026 U	0.03 U	0.03 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.094 U	0.092 U	0.11 U	0.1 U	0.093 U	0.11 U	0.11 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.017 U	0.016 U	0.014 U	0.017 U	0.016 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.032 U	0.04 U	0.036 U	0.033 U	0.038 U	0.038 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.034 U	0.042 U	0.038 U	0.035 U	0.04 U	0.04 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.0098 U	0.012 U	0.011 U	0.0099 U	0.011 U	0.011 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0083 U	0.0081 U	0.01 U	0.009 U	0.0082 U	0.0095 U	0.0094 U	0.0088 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.076 U	0.093 U	0.084 U	0.076 U	0.089 U	0.088 U	0.082 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.26 U	0.32 U	0.29 U	0.26 U	0.31 U	0.3 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.017 U	0.015 U	0.014 U	0.016 U	0.016 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.018 U	0.023 U	0.02 U	0.018 U	0.021 U	0.021 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.008 U	0.0078 U	0.0096 U	0.0087 U	0.0079 U	0.0092 U	0.0091 U	0.0085 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.0087 U	0.011 U	0.0097 U	0.0088 U	0.01 U	0.01 U	0.0095 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.0076 U	0.0094 U	0.0084 U	0.0077 U	0.017 J	0.02 J	0.0083 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.018 U	0.017 U	0.015 U	0.018 U	0.017 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.011 U	0.014 U	0.013 U	0.011 U	0.013 U	0.013 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.014 U	0.013 U	0.012 U	0.014 U	0.013 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0093 U	0.0092 U	0.011 U	0.01 U	0.0092 U	0.011 U	0.011 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.038 U	0.047 U	0.043 U	0.039 U	0.045 U	0.045 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.013 U	0.011 U	0.01 U	0.012 U	0.012 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.092 U	0.11 U	0.1 U	0.093 U	0.11 U	0.11 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.013 U	0.013 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.018 U	0.016 U	0.015 U	0.017 U	0.017 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.0089 U	0.011 U	0.0098 U	0.0089 U	0.01 U	0.01 U	0.0096 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.013 U	0.011 U	0.01 U	0.012 U	0.012 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.016 U	0.014 U	0.013 U	0.015 U	0.015 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.2 U	0.18 U	0.17 U	0.19 U	0.19 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0085 U	0.0083 U	0.01 U	0.0092 U	0.0084 U	0.031 J	0.039 J	0.0091 U
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.0089 U	0.011 U	0.0098 U	0.0089 U	0.01 U	0.01 U	0.0096 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0075 U	0.0092 U	0.0083 U	0.0076 U	0.0088 U	0.0087 U	0.0082 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.033 U	0.04 U	0.036 U	0.033 U	0.13 J	0.18 J	0.036 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.015 U	0.019 U	0.017 U	0.015 U	0.018 U	0.018 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.026 U	0.032 U	0.029 U	0.026 U	0.031 U	0.03 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.045	0.029 U	0.14	0.033 J	0.029 U	**1.7**	**2.4**	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.046**	**0.03 J**	**0.16**	**0.036 J**	0.01 U	**2**	**2.4**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.065	0.029 J	**0.41**	0.11	0.014 U	**6.8**	**8.3**	0.025 J
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.052 J+	0.023 J+	0.19 J	0.05 J	0.02 U	2.2	2.8 J+	0.022 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.025 J	0.015 U	0.13	0.032 J	0.015 U	**2.4**	**3.2**	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.013 U	0.012 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0083 U	0.0081 U	0.01 U	0.009 U	0.0082 U	0.0095 U	0.0094 U	0.0088 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.013 U	0.017 U	0.015 U	0.014 U	0.016 U	0.016 U	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.025 U	0.031 U	0.028 U	0.025 U	0.029 U	0.029 U	0.027 U
Carbazole	--	--	--	mg/kg	0.0087 U	0.0085 U	0.017 J	0.0095 U	0.0086 U	0.11 J	0.15 J	0.0093 U
Chrysene	**16**	290	1.2	mg/kg	0.045 J	0.038 J	0.25 J	0.086 J	0.0094 U	2.3	4.1	0.011 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.018 U	**0.056 J+**	0.02 U	0.018 U	**0.61**	**0.99 J+**	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.01 U	0.013 U	0.012 U	0.01 U	0.041 J	0.049 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.0098 U	0.012 U	0.011 U	0.0099 U	0.011 U	0.011 U	0.011 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-012	CFSB-013	CFSB-013	CFSB-013	CFSB-014	CFSB-014	CFSB-014
					Sample Date:	5/28/2016	5/28/2016	5/19/2016	5/19/2016	5/19/2016	6/2/2016	6/2/2016	6/2/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-012-SO-0.5-2	CFSB-012-SO-10-12	CFSB-013-SO-0-0.5	CFSB-013-SO-0.5-2.0	CFSB-013-SO-10-12	CFSB-014-SO-0-0.5	CFSB-014-SO-0.5-2	CFSB-014-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.012 U	0.012 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.01 U	0.01 U	0.013 U	0.011 U	0.01 U	0.012 U	0.012 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.017 U	0.022 U	0.019 U	0.018 U	0.021 U	0.02 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.071 J	0.03 J	0.21 J	0.048 J	0.01 U	2.3	2.7	0.014 J
Fluorene	240	3000	0.54	mg/kg		0.0076 U	0.0075 U	0.0092 U	0.0083 U	0.0076 U	0.012 J	0.016 J	0.0082 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.017 U	0.015 U	0.014 U	0.016 U	0.016 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0099 U	0.0097 U	0.012 U	0.011 U	0.0098 U	0.011 U	0.011 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 UJ	0.021 UJ	0.026 U	0.024 U	0.022 U	0.025 U	0.025 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.016 U	0.014 U	0.013 U	0.015 U	0.015 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.047	0.023 J	**0.2 J+**	0.049 J+	0.023 U	**2.7**	**3.6 J+**	0.025 U
Isophorone	570	2400	0.026	mg/kg		0.0075 U	0.0074 U	0.013 J	0.0082 U	0.0074 U	0.0087 U	0.0086 U	0.0081 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0089 U	0.0087 U	0.011 U	0.0097 U	0.0088 U	0.042 J	0.047 J	0.0095 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.013 U	0.013 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.014 U	0.013 U	0.012 U	0.014 U	0.013 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.031 U	0.038 U	0.035 U	0.031 U	0.037 U	0.036 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.042 U	0.042 U	0.051 U	0.046 U	0.042 U	0.049 U	0.048 U	0.045 U
Phenanthrene	--	--	--	mg/kg		0.035 J	0.022 J	0.098 J	0.031 J	0.0092 U	0.65	0.78	0.01 U
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.014 U	0.012 U	0.011 U	0.013 U	0.013 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.077 J	0.037 J	0.22 J	0.058 J	0.016 U	2.3	2.6	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-016	CFSB-016	CFSB-016	CFSB-019	CFSB-019	CFSB-019	CFSB-019	CFSB-021
				Sample Date:	6/2/2016	6/2/2016	6/2/2016	6/4/2016	6/4/2016	6/4/2016	6/13/2016	5/23/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-016-SO-0-0.5	CFSB-016-SO-0.5-2	CFSB-016-SO-10-12	CFSB-019-SO-0-0.5	CFSB-019-SO-0.5-2	CFSB-DUP13-SO	CFSB-019-SO-10-12	CFSB-021-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.26 U	0.19 U	0.032 U	0.072 J	0.66 U	0.64 U	0.03 U	0.035 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.22 U	0.17 U	0.028 U	0.029 U	0.58 U	0.55 U	0.026 U	0.03 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.8 U	0.61 U	0.1 U	0.1 U	2.1 U	2 U	0.095 U	0.11 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.12 U	0.094 U	0.015 U	0.016 U	0.32 U	0.31 U	0.015 U	0.017 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.28 U	0.21 U	0.035 U	0.037 U	0.73 U	0.7 U	0.033 U	0.038 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.3 U	0.23 U	0.037 U	0.039 U	0.77 U	0.74 U	0.035 U	0.04 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.085 U	0.065 U	0.011 U	0.011 U	0.22 U	0.21 U	0.01 U	0.012 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.071 U	0.054 U	0.0088 U	0.0092 U	0.18 U	0.18 U	0.0083 U	0.0095 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.66 U	0.5 U	0.082 U	0.085 U	1.7 U	1.6 U	0.078 U	0.089 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	2.3 U	1.7 U	0.28 U	0.29 U	5.9 U	5.6 U	0.27 U	0.31 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.12 U	0.09 U	0.015 U	0.015 U	0.31 U	0.3 U	0.014 U	0.016 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.16 U	0.12 U	0.02 U	0.021 U	0.41 U	0.4 U	0.019 U	0.022 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.068 U	0.052 U	0.0085 U	0.0088 U	0.18 U	0.17 U	0.008 U	0.0092 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.076 U	0.058 U	0.0095 U	0.0099 U	0.2 U	0.19 U	0.009 U	0.01 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.37 J	0.094 J	0.0083 U	1	0.2 J	0.28 J	0.022 J	0.021 J
2-Methylphenol	320	4100	0.075	mg/kg	0.13 U	0.099 U	0.016 U	0.017 U	0.34 U	0.32 U	0.015 U	0.018 U
2-Nitroaniline	63	800	0.008	mg/kg	0.099 U	0.075 U	0.012 U	0.013 U	0.26 U	0.25 U	0.012 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg	0.1 U	0.077 U	0.013 U	0.013 U	0.26 U	0.25 U	0.012 U	0.014 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.08 U	0.061 U	0.01 U	0.01 U	0.21 U	0.2 U	0.0094 U	0.048 J
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.33 U	0.25 U	0.042 U	0.043 U	0.87 U	0.83 U	0.039 U	0.045 U
3-Nitroaniline	--	--	--	mg/kg	0.089 U	0.068 U	0.011 U	0.012 U	0.23 U	0.22 U	0.01 U	0.012 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.8 U	0.61 U	0.1 U	0.1 U	2.1 U	2 U	0.094 U	0.11 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.094 U	0.072 U	0.012 U	0.012 U	0.24 U	0.23 U	0.011 U	0.013 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.13 U	0.098 U	0.016 U	0.017 U	0.33 U	0.32 U	0.015 U	0.017 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.077 U	0.059 U	0.0096 U	0.01 U	0.2 U	0.19 U	0.0091 U	0.01 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.09 U	0.068 U	0.011 U	0.012 U	0.23 U	0.22 U	0.011 U	0.012 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.11 U	0.086 U	0.014 U	0.015 U	0.29 U	0.28 U	0.013 U	0.015 U
4-Nitrophenol	--	--	--	mg/kg	1.4 U	1.1 U	0.18 U	0.19 U	3.7 U	3.6 U	0.17 U	0.19 U
Acenaphthene	360	4500	0.55	mg/kg	0.72 J	0.42 J	0.0091 U	0.069 J	3.4 J	5.2 J	0.077 J	0.11 J
Acenaphthylene	--	--	--	mg/kg	0.077 U	0.059 U	0.0096 U	0.033 J	0.2 U	0.19 U	0.0091 U	0.01 U
Acetophenone	780	12000	0.058	mg/kg	0.065 U	0.05 U	0.0082 U	0.011 J	0.17 U	0.16 U	0.0077 U	0.0088 U
Anthracene	1800	23000	5.8	mg/kg	1.9 J	1.2 J	0.036 U	0.049 J	5.4 J	8	0.12 J	0.16 J
Atrazine	2.4	10	0.0002	mg/kg	0.13 U	0.1 U	0.017 U	0.017 U	0.35 U	0.33 U	0.016 U	0.018 U
Benzaldehyde	170	820	0.0041	mg/kg	0.23 U	0.17 U	0.029 U	0.03 U	0.59 U	0.57 U	0.027 U	0.037 J
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**11**	**8.2**	0.031 U	0.032 U	**46**	**70**	**1.1**	**0.85**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**14**	**9.7**	0.011 U	0.012 U	**66**	**98**	**1.6**	**1.1**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**30**	**26**	0.015 U	0.015 U	**87**	**140**	**2.1**	**1.8**
Benzo[g,h,i]perylene	--	--	--	mg/kg	15 J+	8.1	0.022 U	0.022 U	59	85	1.6	1.1
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**12**	**9**	0.016 U	0.017 U	**37**	**41**	0.8	0.018 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.093 U	0.071 U	0.012 U	0.012 U	0.24 U	0.23 U	0.011 U	0.013 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.071 U	0.054 U	0.0088 U	0.0092 U	0.18 U	0.18 U	0.0083 U	0.0095 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.12 U	0.25 J	0.015 U	0.015 U	0.3 U	0.29 U	0.014 U	0.016 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.092 U	0.07 U	0.012 U	0.012 U	0.24 U	0.23 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.22 U	0.16 U	0.027 U	0.028 U	0.56 U	0.54 U	0.025 U	0.029 U
Carbazole	--	--	--	mg/kg	1.5 J	0.88 J	0.0093 U	0.0096 U	5.1 J	7.3 J	0.11 J	0.16 J
Chrysene	**16**	290	1.2	mg/kg	16	11	0.01 U	0.011 U	**57**	**82**	1.4	1.3
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**3.3 J+**	**2.7**	0.019 U	0.02 U	**12**	**20**	**0.29**	**0.3**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.68 J	0.32 J	0.011 U	0.078 J	0.7 J	1 J	0.017 J	0.053 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.085 U	0.065 U	0.011 U	0.011 U	2.3 J	2.3 J	0.01 U	0.012 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-016	CFSB-016	CFSB-019	CFSB-019	CFSB-019	CFSB-019	CFSB-021
					Sample Date:	6/2/2016	6/2/2016	6/4/2016	6/4/2016	6/4/2016	6/13/2016	5/23/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-016-SO-0-0.5	CFSB-016-SO-0.5-2	CFSB-016-SO-10-12	CFSB-019-SO-0-0.5	CFSB-019-SO-0.5-2	CFSB-DUP13-SO	CFSB-019-SO-10-12	CFSB-021-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.087 U	0.066 U	0.011 U	0.011 U	0.23 U	0.22 U	0.01 U	0.012 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.09 U	0.068 U	0.011 U	0.012 U	0.23 U	0.22 U	0.052 J	0.012 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.15 U	0.12 U	0.019 U	0.02 U	0.39 U	0.38 U	0.018 U	0.021 U
Fluoranthene	**240**	3000	8.9	mg/kg		19	15	0.011 U	0.029 J	73	110	1.7	1.5
Fluorene	240	3000	0.54	mg/kg		0.37 J	0.28 J	0.0082 U	0.19 J	1.5 J	2.3 J	0.035 J	0.087 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.12 U	0.093 U	0.015 U	0.016 U	0.31 U	0.3 U	0.014 U	0.016 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.084 U	0.064 U	0.011 U	0.011 U	0.22 U	0.21 U	0.01 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.19 U	0.14 U	0.023 U	0.024 U	0.48 U	0.46 U	0.022 U	0.025 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.11 U	0.084 U	0.014 U	0.014 U	0.28 U	0.27 U	0.013 U	0.015 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**17 J+**	**10**	0.025 U	0.026 U	**61**	**88**	**1.5**	**1.1**
Isophorone	570	2400	0.026	mg/kg		0.064 U	0.049 U	0.008 U	0.0083 U	0.17 U	0.16 U	0.0076 U	0.072 J
Naphthalene	**3.8**	17	0.00054	mg/kg		0.72 J	0.27 J	0.0095 U	0.083 J	0.32 J	0.6 J	0.023 J	0.051 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.094 U	0.072 U	0.012 U	0.012 U	0.24 U	0.23 U	0.011 U	0.013 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.1 U	0.077 U	0.013 U	0.013 U	0.26 U	0.25 U	0.012 U	0.014 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.27 U	0.21 U	0.034 U	0.035 U	0.7 U	0.68 U	0.032 U	0.037 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.36 U	0.28 U	0.045 U	0.047 U	0.94 U	0.9 U	0.043 U	0.049 U
Phenanthrene	--	--	--	mg/kg		9	6.2	0.01 U	0.51	25	38	0.61	0.89
Phenol	1900	25000	0.33	mg/kg		0.098 U	0.075 U	0.012 U	0.013 U	0.25 U	0.24 U	0.012 U	0.013 U
Pyrene	**180**	2300	1.3	mg/kg		21	15	0.017 U	0.058 J	74	98	1.8	1.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-021	CFSB-022	CFSB-022	CFSB-022	CFSB-025	CFSB-025	CFSB-025
					Sample Date:	5/23/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-021-SO-0.5-2	CFSB-021-SO-10-12	CFSB-022-SO-0-0.5	CFSB-022-SO-0.5-2	CFSB-022-SO-10-12	CFSB-025-SO-0-0.5	CFSB-025-SO-0.5-2	CFSB-025-SO-10-12
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.03 U	0.029 U	0.034 U	0.034 U	0.03 U	2.6 U	6.1 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.026 U	0.026 U	0.03 U	0.03 U	0.026 U	2.3 U	5.3 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.095 U	0.092 U	0.11 U	0.11 U	0.094 U	8.3 U	19 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.015 U	0.014 U	0.016 U	0.017 U	0.014 U	1.3 U	2.9 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.033 U	0.032 U	0.037 U	0.038 U	0.033 U	2.9 U	6.7 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.035 U	0.034 U	0.04 U	0.04 U	0.035 U	3.1 U	7.1 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.0098 U	0.011 U	0.011 U	0.01 U	0.88 U	2 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0084 U	0.0081 U	0.0094 U	0.0095 U	0.0083 U	0.73 U	1.7 U	0.0089 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.078 U	0.076 U	0.088 U	0.088 U	0.077 U	6.8 U	16 U	0.083 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.27 U	0.26 U	0.3 U	0.3 U	0.26 U	23 U	54 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.014 U	0.016 U	0.016 U	0.014 U	1.2 U	2.8 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.019 U	0.018 U	0.021 U	0.021 U	0.019 U	1.7 U	3.8 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.008 U	0.0078 U	0.009 U	0.0091 U	0.0079 U	0.7 U	1.6 U	0.0085 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.009 U	0.0088 U	0.01 U	0.01 U	0.0089 U	0.79 U	1.8 U	0.0096 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0078 U	0.0076 U	0.0088 U	0.0089 U	0.0077 U	1.6 J	1.6 U	0.0083 U
2-Methylphenol	320	4100	0.075	mg/kg		0.015 U	0.015 U	0.017 U	0.017 U	0.015 U	1.4 U	3.1 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.011 U	0.013 U	0.013 U	0.012 U	1 UJ	2.3 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg		0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	1 U	2.4 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0094 U	0.0092 U	0.011 U	0.011 U	0.0093 U	0.83 U	1.9 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.04 U	0.039 U	0.044 U	0.045 U	0.039 U	3.5 U	7.9 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg		0.01 U	0.01 U	0.012 U	0.012 U	0.01 U	0.92 U	2.1 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.094 U	0.092 U	0.11 U	0.11 U	0.093 U	8.3 U	19 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.013 U	0.013 U	0.011 U	0.98 U	2.2 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.015 U	0.017 U	0.017 U	0.015 U	1.3 U	3 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0091 U	0.0089 U	0.01 U	0.01 U	0.009 U	0.8 U	1.8 U	0.0097 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.01 U	0.012 U	0.012 U	0.01 U	0.93 U	2.1 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.013 U	0.013 U	0.015 U	0.015 U	0.013 U	1.2 U	2.7 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.17 U	0.19 U	0.19 U	0.17 U	15 U	34 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg		0.0086 U	0.0084 U	0.053 J	0.018 J	0.011 J	5.3 J	8.4 J	0.0091 U
Acenaphthylene	--	--	--	mg/kg		0.0091 U	0.0089 U	0.01 U	0.01 U	0.009 U	0.8 U	1.8 U	0.0097 U
Acetophenone	780	12000	0.058	mg/kg		0.0077 U	0.0075 U	0.0087 U	0.0087 U	0.0076 U	0.68 U	1.5 U	0.0082 U
Anthracene	1800	23000	5.8	mg/kg		0.034 U	0.033 U	0.075 J	0.038 U	0.033 U	38	110	0.036 U
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.015 U	0.018 U	0.018 U	0.016 U	1.4 U	3.2 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg		0.027 U	0.026 U	0.03 U	0.031 U	0.027 U	2.4 U	5.4 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.081	0.029 U	**0.61**	**0.18**	0.13	**190**	**260**	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**0.1**	0.01 U	**0.8**	**0.2**	**0.16**	**140**	**170**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**0.18**	0.013 U	**1.2**	**0.33**	**0.23**	**210**	**330**	0.015 U
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.078 J	0.02 U	0.57	0.14 J	0.098 J	50	140	0.022 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.071	0.015 U	0.017 U	0.14	0.09	**78**	**110**	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 U	0.012 U	0.013 U	0.011 U	0.97 U	2.2 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0084 U	0.0081 U	0.0094 U	0.0095 U	0.0083 U	0.73 U	1.7 U	0.0089 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.013 U	0.016 U	0.016 U	0.014 U	1.2 U	5.9 J	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.96 U	2.2 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg		0.025 U	0.025 U	0.029 U	0.029 U	0.025 U	2.2 U	5.1 U	0.027 U
Carbazole	--	--	--	mg/kg		0.011 J	0.0086 U	0.066 J	0.017 J	0.015 J	8.2 J	6.4 J	0.0093 U
Chrysene	**16**	290	1.2	mg/kg		0.13 J	0.0094 U	0.77	0.25 J	0.17 J	**270**	**500**	0.01 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**0.019 J**	0.018 U	**0.11**	**0.038 J**	**0.027 J**	**20**	**42**	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.011 U	0.01 U	0.012 U	0.012 U	0.011 U	3.7 J	5.8 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.0098 U	0.011 U	0.011 U	0.01 U	0.88 U	2 U	0.011 U

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Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-021	CFSB-022	CFSB-022	CFSB-022	CFSB-025	CFSB-025	CFSB-025
					Sample Date:	5/23/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-021-SO-0.5-2	CFSB-021-SO-10-12	CFSB-022-SO-0-0.5	CFSB-022-SO-0.5-2	CFSB-022-SO-10-12	CFSB-025-SO-0-0.5	CFSB-025-SO-0.5-2	CFSB-025-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.012 U	0.012 U	0.01 U	0.9 U	2.1 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.01 U	0.012 U	0.012 U	0.01 U	0.93 U	2.1 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.02 U	0.02 U	0.018 U	1.6 U	3.6 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.14 J	0.01 U	0.98	0.38 J	0.23 J	**320**	**1400**	0.011 U
Fluorene	240	3000	0.54	mg/kg		0.0077 U	0.0075 U	0.023 J	0.012 J	0.0076 U	4.2 J	22 J	0.0082 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.016 U	0.016 U	0.014 U	1.3 U	2.9 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.0097 U	0.011 U	0.011 U	0.0098 U	0.87 U	2 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.025 U	0.025 U	0.022 U	1.9 U	4.4 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.015 U	0.015 U	0.013 U	1.1 U	2.6 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.078	0.023 U	**0.52**	0.14	0.093	**63**	**140**	0.025 U
Isophorone	570	2400	0.026	mg/kg		0.019 J	0.0074 U	0.0086 U	0.024 J	0.013 J	0.67 U	1.5 U	0.0081 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.009 U	0.0088 U	0.01 U	0.01 U	0.0089 U	3.8 J	2.5 J	0.0096 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.013 U	0.013 U	0.011 U	0.98 U	2.2 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	1 U	2.4 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.031 U	0.036 U	0.036 U	0.032 U	2.8 U	6.4 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.042 U	0.048 U	0.049 U	0.042 U	3.8 U	8.6 U	0.046 U
Phenanthrene	--	--	--	mg/kg		0.078 J	0.0092 U	0.37 J	0.15 J	0.1 J	56	440	0.01 U
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.011 U	0.013 U	0.013 U	0.011 U	1 U	2.3 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.17 J	0.016 U	1.1	0.46	0.26 J	**240**	**1200**	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-026	CFSB-026	CFSB-026	CFSB-027	CFSB-027	CFSB-027	CFSB-028	CFSB-028
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	7/18/2016	7/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5
				Sample Designation:	CFSB-026-SO-0-0.5	CFSB-026-SO-0.5-2	CFSB-026-SO-10-12	CFSB-027-SO-0-0.5	CFSB-027-SO-0.5-2	CFSB-027-SO-10-12	CFSB-028-SO-0.5-2	CFSB-028-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	1.4 U	1.7 U	0.029 U	0.15 U	0.82 U	0.15 U	0.031 U	0.064 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	1.3 U	1.5 U	0.026 U	0.13 U	0.71 U	0.13 U	0.027 U	0.056 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	4.5 U	5.2 U	0.092 U	0.47 U	2.6 U	0.48 U	0.096 U	0.2 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.7 U	0.8 U	0.014 U	0.073 U	0.39 U	0.074 U	0.015 U	0.031 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	1.6 U	1.8 U	0.032 U	0.17 U	0.9 U	0.17 U	0.034 U	0.07 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	1.7 U	1.9 U	0.034 U	0.18 U	0.95 U	0.18 U	0.036 U	0.075 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.48 U	0.56 U	0.0098 U	0.05 U	0.27 U	0.051 U	0.01 U	0.021 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.4 U	0.46 U	0.0081 U	0.042 U	0.23 U	0.043 U	0.0084 U	0.018 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	3.7 U	4.3 U	0.076 U	0.39 U	2.1 U	0.4 U	0.079 U	0.16 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	13 U	15 U	0.26 U	1.3 U	7.3 U	1.4 U	0.27 U	0.57 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.67 U	0.77 U	0.014 U	0.07 U	0.38 U	0.071 U	0.014 U	0.03 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.9 U	1 U	0.018 U	0.094 U	0.51 U	0.096 U	0.019 U	0.04 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.38 U	0.44 U	0.0078 U	0.04 U	0.22 U	0.041 U	0.0081 U	0.017 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.43 U	0.5 U	0.0087 U	0.045 U	0.24 U	0.046 U	0.0091 U	0.019 U
2-Methylnaphthalene	24	300	0.019	mg/kg	3.2 J	4.2 J	0.0076 U	0.095 J	0.37 J	0.079 J	0.0079 U	0.037 J
2-Methylphenol	320	4100	0.075	mg/kg	0.74 U	0.85 U	0.015 U	0.077 U	0.42 U	0.079 U	0.016 U	0.033 U
2-Nitroaniline	63	800	0.008	mg/kg	0.56 U	0.64 U	0.011 U	0.058 U	0.32 UJ	0.059 UJ	0.012 U	0.025 U
2-Nitrophenol	--	--	--	mg/kg	0.57 U	0.66 U	0.012 U	0.059 U	0.32 U	0.061 U	0.012 U	0.025 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.45 U	0.52 U	0.0092 U	0.047 U	0.26 U	0.048 U	0.0095 U	0.02 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	1.9 U	2.2 U	0.038 U	0.2 U	1.1 U	0.2 U	0.04 U	0.084 U
3-Nitroaniline	--	--	--	mg/kg	0.5 U	0.58 U	0.01 U	0.052 U	0.28 U	0.053 U	0.011 U	0.022 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	4.5 U	5.2 U	0.092 U	0.47 U	2.6 U	0.48 U	0.096 U	0.2 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.53 U	0.61 U	0.011 U	0.056 U	0.3 U	0.057 U	0.011 U	0.024 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.73 U	0.84 U	0.015 U	0.076 U	0.41 U	0.077 U	0.015 U	0.032 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.44 U	0.5 U	0.0088 U	0.046 U	0.25 U	0.046 U	0.0092 U	0.019 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.51 U	0.58 U	0.01 U	0.053 U	0.29 U	0.054 U	0.011 U	0.022 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.64 U	0.74 U	0.013 U	0.067 U	0.36 U	0.068 U	0.014 U	0.028 U
4-Nitrophenol	--	--	--	mg/kg	8.1 U	9.4 U	0.17 U	0.85 U	4.6 U	0.87 U	0.17 U	0.36 U
Acenaphthene	360	4500	0.55	mg/kg	8.4 J-	16 J	0.0083 U	0.91 J	5.2 J	0.94 J	0.0087 U	0.31 J
Acenaphthylene	--	--	--	mg/kg	0.44 U	0.5 U	0.0088 U	0.046 U	0.25 U	0.046 U	0.0092 U	0.019 U
Acetophenone	780	12000	0.058	mg/kg	0.37 U	0.43 U	0.0075 U	0.039 U	0.21 U	0.039 U	0.0078 U	0.016 U
Anthracene	1800	23000	5.8	mg/kg	21	23	0.033 U	2	9.3 J	1.9	0.034 U	0.89
Atrazine	2.4	10	0.0002	mg/kg	0.75 U	0.87 U	0.015 U	0.079 U	0.43 U	0.08 U	0.016 U	0.033 U
Benzaldehyde	170	820	0.0041	mg/kg	1.3 U	1.5 U	0.026 U	0.13 U	0.73 U	0.14 U	0.027 U	0.057 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**89**	**96**	0.036	**13**	**60**	**12**	0.03 U	**4.9**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**76**	**120**	**0.02 J**	**15**	**65**	**14**	0.011 U	**5.3**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**190**	**230**	0.044	**18**	**83**	**17**	0.014 U	**8.8**
Benzo[g,h,i]perylene	--	--	--	mg/kg	56	94	0.02 U	13	44	9.3	0.021 U	5
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**57**	**67**	0.017 J	**6.1**	**27**	**6.7**	0.016 U	**3.3**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.53 U	0.61 U	0.011 U	0.055 U	0.3 U	0.056 U	0.011 U	0.023 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.4 U	0.46 U	0.0081 U	0.042 U	0.23 U	0.043 U	0.0084 U	0.018 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.66 U	0.76 U	0.013 U	0.069 U	0.37 U	0.07 U	0.014 U	0.17 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.52 U	0.6 U	0.011 U	0.055 U	0.3 U	0.056 U	0.011 U	0.55 J
Caprolactam	3100	40000	0.25	mg/kg	1.2 U	1.4 U	0.025 UJ	0.13 U	0.69 U	0.13 U	0.026 U	0.054 U
Carbazole	--	--	--	mg/kg	4.5 J	12 J	0.0085 U	1.5 J	6.8 J	1.5 J	0.0089 U	0.76
Chrysene	**16**	290	1.2	mg/kg	**220**	**200**	0.054 J	15	**70**	15	0.011 J	8.8
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**17**	**25**	0.018 U	**3.7**	**14**	**2.8**	0.019 U	**1.4**
Dibenzofuran	**7.3**	100	0.015	mg/kg	4.1 J	**8.8 J**	0.01 U	0.3 J	1.3 J	0.26 J	0.011 U	0.097 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.48 U	0.56 U	0.0098 U	0.05 U	0.27 U	0.051 U	0.01 U	0.021 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-026	CFSB-026	CFSB-026	CFSB-027	CFSB-027	CFSB-027	CFSB-028	CFSB-028
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	7/18/2016	7/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5
				Sample Designation:	CFSB-026-SO-0-0.5	CFSB-026-SO-0.5-2	CFSB-026-SO-10-12	CFSB-027-SO-0-0.5	CFSB-027-SO-0.5-2	CFSB-027-SO-10-12	CFSB-028-SO-0.5-2	CFSB-028-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.49 U	0.57 U	0.01 U	0.051 U	0.28 U	0.052 U	0.01 U	0.022 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.51 U	0.58 U	0.01 U	0.053 U	0.29 U	0.054 U	0.011 U	0.022 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.86 U	0.99 U	0.017 U	0.09 U	0.49 U	0.092 U	0.018 U	0.038 U
Fluoranthene	**240**	3000	8.9	mg/kg	**250**	**300**	0.12 J	22	100	20	0.011 U	7.5
Fluorene	240	3000	0.54	mg/kg	8.1 J	12 J	0.0075 U	0.82 J	3.4 J	0.65 J	0.0078 U	0.21 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.69 U	0.79 U	0.014 U	0.072 U	0.39 U	0.073 U	0.015 U	0.03 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.48 U	0.55 U	0.0097 U	0.05 U	0.27 U	0.051 U	0.01 U	0.021 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	1.1 U	1.2 U	0.021 U	0.11 U	0.6 U	0.11 U	0.022 U	0.047 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.62 U	0.71 U	0.013 U	0.065 U	0.35 U	0.066 U	0.013 U	0.027 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**59**	**95**	0.023 U	**14**	**51**	**10**	0.024 U	**5.2**
Isophorone	570	2400	0.026	mg/kg	0.36 U	0.42 U	0.0074 U	0.038 U	0.21 U	0.039 U	0.0077 U	0.016 U
Naphthalene	**3.8**	17	0.00054	mg/kg	2.1 J	3.3 J	0.0087 U	0.2 J	0.81 J	0.14 J	0.0091 U	0.077 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.53 U	0.61 U	0.011 U	0.056 U	0.3 U	0.057 U	0.011 U	0.024 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.57 U	0.66 U	0.012 U	0.059 U	0.32 U	0.061 U	0.012 U	0.025 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	1.5 U	1.8 U	0.031 U	0.16 U	0.87 U	0.16 U	0.032 U	0.068 U
Pentachlorophenol	1	4	0.000057	mg/kg	2 U	2.4 U	0.042 U	0.21 U	1.2 U	0.22 U	0.043 U	0.091 U
Phenanthrene	--	--	--	mg/kg	86	68	0.054 J	12	43	9	0.0095 U	3.7
Phenol	1900	25000	0.33	mg/kg	0.55 U	0.64 U	0.011 U	0.058 U	0.31 U	0.059 U	0.012 U	0.024 U
Pyrene	**180**	2300	1.3	mg/kg	**300**	170	0.1 J	22	87	15	0.016 U	7.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-028	CFSB-029	CFSB-029	CFSB-029	CFSB-030	CFSB-030	CFSB-030	CFSB-033
				Sample Date:	7/18/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	5/23/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-028-SO-10-12	CFSB-029-SO-0-0.5	CFSB-029-SO-0.5-2	CFSB-029-SO-10-12	CFSB-030-SO-0-0.5	CFSB-030-SO-0.5-2	CFSB-030-SO-10-12	CFSB-033-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.031 U	0.03 U	0.031 U	0.073 U	0.16 U	0.03 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.027 U	0.026 U	0.027 U	0.064 U	0.14 U	0.026 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.094 U	0.096 U	0.094 U	0.097 U	0.23 U	0.5 U	0.093 U	0.099 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.015 U	0.014 U	0.015 U	0.035 U	0.077 U	0.014 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.034 U	0.033 U	0.034 U	0.08 U	0.18 U	0.033 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.036 U	0.035 U	0.036 U	0.085 U	0.19 U	0.035 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.024 U	0.054 U	0.0099 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0083 U	0.0085 U	0.0083 U	0.0086 U	0.02 U	0.044 U	0.0082 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.079 U	0.077 U	0.08 U	0.19 U	0.41 U	0.077 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.27 U	0.27 U	0.28 U	0.65 U	1.4 U	0.26 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.034 U	0.075 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.019 U	0.019 U	0.045 U	0.1 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.008 U	0.0082 U	0.008 U	0.0083 U	0.019 U	0.043 U	0.0079 U	0.0084 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.0091 U	0.0089 U	0.0093 U	0.022 U	0.048 U	0.0088 U	0.0094 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0078 U	0.0079 U	0.009 J	0.008 U	0.063 J	0.09 J	0.0077 U	0.0082 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.016 U	0.015 U	0.016 U	0.037 U	0.082 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.028 U	0.062 U	0.011 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.029 U	0.063 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0094 U	0.0096 U	0.012 J	0.0097 U	0.023 U	0.05 U	0.0093 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.04 U	0.039 U	0.041 U	0.095 U	0.21 U	0.039 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.011 U	0.01 U	0.011 U	0.025 U	0.056 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.094 U	0.096 U	0.094 U	0.097 U	0.23 U	0.5 U	0.093 U	0.099 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.027 U	0.059 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.015 U	0.016 U	0.037 U	0.081 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.0092 U	0.009 U	0.0094 U	0.022 U	0.048 U	0.0089 U	0.0095 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.026 U	0.056 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.014 U	0.013 U	0.014 U	0.032 U	0.071 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.18 U	0.41 U	0.91 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0085 U	0.021 J	0.041 J	0.0088 U	0.36 J	0.49 J	0.0084 U	0.051 J
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.0092 U	0.009 U	0.0094 U	0.022 U	0.048 U	0.0089 U	0.0095 U
Acetophenone	780	12000	0.058	mg/kg	0.0077 U	0.0078 U	0.0077 U	0.0079 U	0.019 U	0.041 U	0.0076 U	0.008 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.039 J	0.072 J	0.035 U	0.85	1.7 J	0.033 U	0.084 J
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.038 U	0.084 U	0.015 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.027 U	0.028 U	0.065 U	0.14 U	0.027 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	**0.31**	**0.63**	0.12	**6**	**12**	0.029 U	**0.6**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	**0.39**	**0.82**	**0.14**	**6.9**	**13**	0.011 U	**0.7**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.014 U	**0.79**	**1.5**	**0.3**	**13**	**19**	0.014 U	**1.5**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.48	1.1	0.2 J	8.2	14	0.02 U	0.82
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.016 U	0.51	0.016 U	**4.3**	**7.9**	0.015 U	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.027 U	0.059 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0083 U	0.0085 U	0.0083 U	0.0086 U	0.02 U	0.044 U	0.0082 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.033 U	0.074 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.026 U	0.058 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.026 U	0.025 U	0.026 U	0.062 U	0.14 U	0.025 UJ	0.027 U
Carbazole	--	--	--	mg/kg	0.0087 U	0.045 J	0.08 J	0.019 J	1.2	1.7 J	0.0086 U	0.12 J
Chrysene	**16**	290	1.2	mg/kg	0.0096 U	0.51	0.93	0.2 J	11	**22**	0.0095 U	1
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	**0.12**	**0.26**	**0.048**	**2.2**	**4.2**	0.018 U	**0.23**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.012 J	0.014 J	0.011 U	0.17 J	0.21 J	0.011 U	0.02 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.024 U	0.054 U	0.0099 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-028	CFSB-029	CFSB-029	CFSB-029	CFSB-030	CFSB-030	CFSB-030	CFSB-033
					Sample Date:	7/18/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	5/23/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-028-SO-10-12	CFSB-029-SO-0-0.5	CFSB-029-SO-0.5-2	CFSB-029-SO-10-12	CFSB-030-SO-0-0.5	CFSB-030-SO-0.5-2	CFSB-030-SO-10-12	CFSB-033-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.01 U	0.011 U	0.025 U	0.055 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.026 U	0.056 U	0.01 U	0.056 J
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.018 U	0.019 U	0.043 U	0.096 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.01 U	0.48	0.87	0.18 J	11	14	0.01 U	1.1
Fluorene	240	3000	0.54	mg/kg		0.0077 U	0.016 J	0.024 J	0.0079 U	0.3 J	0.43 J	0.0076 U	0.031 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.015 U	0.014 U	0.015 U	0.035 U	0.076 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0099 U	0.01 U	0.0099 U	0.01 U	0.024 U	0.053 U	0.0098 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.022 U	0.023 U	0.053 U	0.12 U	0.022 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.031 U	0.069 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.023 U	**0.44**	**0.98**	**0.18**	**8.8**	**16**	0.023 U	**0.82**
Isophorone	570	2400	0.026	mg/kg		0.0076 U	0.034 J	0.11 J	0.093 J	0.018 U	0.04 U	0.0075 U	0.036 J
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0089 U	0.011 J	0.01 J	0.0093 U	0.14 J	0.22 J	0.0088 U	0.011 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.027 U	0.059 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.029 U	0.063 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.033 U	0.032 U	0.033 U	0.078 U	0.17 U	0.032 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.043 U	0.043 U	0.044 U	0.1 U	0.23 U	0.042 U	0.045 U
Phenanthrene	--	--	--	mg/kg		0.0094 U	0.26 J	0.37	0.11 J	4.4	7.6	0.0093 U	0.48
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.012 U	0.011 U	0.012 U	0.028 U	0.26 J	0.011 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.016 U	0.59	0.92	0.25 J	9.6	15	0.016 U	1.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-033	CFSB-033	CFSB-034	CFSB-034	CFSB-034	CFSB-035	CFSB-035	CFSB-035
			Sample Date:		5/23/2016	5/23/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-033-SO-0.5-2	CFSB-033-SO-10-12	CFSB-034-SO-0-0.5	CFSB-034-SO-0.5-2	CFSB-034-SO-10-12	CFSB-035-SO-0-0.5	CFSB-035-SO-0.5-2	CFSB-035-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.15 U	0.059 U	0.34 UJ	0.034 UJ	0.033 UJ	0.031 U	0.031 U	0.032 UJ
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.13 U	0.051 U	0.29 UJ	0.03 UJ	0.029 UJ	0.027 U	0.027 U	0.028 UJ
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.48 U	0.18 U	1.1 UJ	0.11 UJ	0.1 UJ	0.099 U	0.097 U	0.1 UJ
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.074 U	0.028 U	0.16 UJ	0.017 UJ	0.016 UJ	0.015 U	0.015 U	0.015 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.17 U	0.065 U	0.37 UJ	0.038 UJ	0.037 UJ	0.035 U	0.034 U	0.035 UJ
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.18 U	0.069 U	0.39 UJ	0.04 UJ	0.039 UJ	0.037 U	0.036 U	0.037 UJ
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.051 U	0.02 U	0.11 UJ	0.011 UJ	0.011 UJ	0.01 U	0.01 U	0.011 UJ
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.042 U	0.016 U	0.093 UJ	0.0095 UJ	0.0092 UJ	0.0087 U	0.0086 U	0.0088 UJ
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.39 U	0.15 U	0.87 UJ	0.088 UJ	0.085 UJ	0.081 U	0.08 U	0.082 UJ
2,4-Dinitrophenol	13	160	0.0044	mg/kg	1.4 U	0.52 U	3 UJ	0.3 UJ	0.29 UJ	0.28 U	0.27 U	0.28 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.071 U	0.027 U	0.16 UJ	0.016 UJ	0.015 UJ	0.015 U	0.014 U	0.015 UJ
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.096 U	0.037 U	0.21 UJ	0.021 UJ	0.021 UJ	0.02 U	0.019 U	0.02 UJ
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.041 U	0.016 U	0.089 UJ	0.0091 UJ	0.0088 UJ	0.0084 U	0.0082 U	0.0085 UJ
2-Chlorophenol	39	580	0.0089	mg/kg	0.046 U	0.018 U	0.1 UJ	0.01 UJ	0.0099 UJ	0.0094 U	0.0092 U	0.0095 UJ
2-Methylnaphthalene	24	300	0.019	mg/kg	0.04 U	0.04 J	0.24 J-	0.0089 UJ	0.0086 UJ	0.0081 U	0.008 U	0.0083 UJ
2-Methylphenol	320	4100	0.075	mg/kg	0.078 U	0.03 U	0.17 UJ	0.018 UJ	0.017 UJ	0.016 U	0.016 U	0.016 UJ
2-Nitroaniline	63	800	0.008	mg/kg	0.059 U	0.023 U	0.13 UJ	0.013 UJ	0.013 UJ	0.012 U	0.012 U	0.012 UJ
2-Nitrophenol	--	--	--	mg/kg	0.06 U	0.023 U	0.13 UJ	0.013 UJ	0.013 UJ	0.012 U	0.012 U	0.013 UJ
3 & 4 Methylphenol	--	--	--	mg/kg	0.048 U	0.029 J	0.1 UJ	0.011 UJ	0.01 UJ	0.0098 U	0.0097 U	0.015 J-
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.2 U	0.077 U	0.44 UJ	0.045 UJ	0.043 UJ	0.041 U	0.041 U	0.042 UJ
3-Nitroaniline	--	--	--	mg/kg	0.053 U	0.02 U	0.12 UJ	0.012 UJ	0.012 UJ	0.011 U	0.011 U	0.011 UJ
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.48 U	0.18 U	1 UJ	0.11 UJ	0.1 UJ	0.098 U	0.097 U	0.1 UJ
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.056 U	0.022 U	0.12 UJ	0.013 UJ	0.012 UJ	0.012 U	0.011 U	0.012 UJ
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.077 U	0.03 U	0.17 UJ	0.017 UJ	0.017 UJ	0.016 U	0.016 U	0.016 UJ
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.046 U	0.018 U	0.1 UJ	0.01 UJ	0.01 UJ	0.0095 U	0.0093 U	0.0096 UJ
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.054 U	0.021 U	0.12 UJ	0.012 UJ	0.012 UJ	0.011 U	0.011 U	0.011 UJ
4-Nitroaniline	25	110	0.0016	mg/kg	0.068 U	0.026 U	0.15 UJ	0.015 UJ	0.015 UJ	0.014 U	0.014 U	0.014 UJ
4-Nitrophenol	--	--	--	mg/kg	0.86 U	0.33 U	1.9 UJ	0.19 UJ	0.19 UJ	0.18 U	0.17 U	0.18 UJ
Acenaphthene	360	4500	0.55	mg/kg	0.043 U	0.41 J	1.7 J-	0.012 J	0.012 J-	0.022 J	0.0088 U	0.0091 UJ
Acenaphthylene	--	--	--	mg/kg	0.046 U	0.018 U	0.1 UJ	0.01 UJ	0.01 UJ	0.0095 U	0.0093 U	0.0096 UJ
Acetophenone	780	12000	0.058	mg/kg	0.039 U	0.015 U	0.086 UJ	0.0088 UJ	0.0085 UJ	0.008 U	0.0079 U	0.0082 UJ
Anthracene	1800	23000	5.8	mg/kg	0.17 U	0.64 J	3.5 J-	0.038 U	0.037 UJ	0.059 J	0.034 U	0.036 UJ
Atrazine	2.4	10	0.0002	mg/kg	0.08 U	0.031 U	0.17 UJ	0.018 UJ	0.017 UJ	0.016 U	0.016 U	0.017 UJ
Benzaldehyde	170	820	0.0041	mg/kg	0.14 U	0.053 U	0.3 UJ	0.031 UJ	0.03 UJ	0.028 U	0.028 U	0.029 UJ
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.81**	**5**	**19 J-**	0.1	0.11 J-	**0.8**	**0.24**	0.031 UJ
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**1.1**	**5.6**	**25 J-**	**0.12**	**0.099 J-**	**0.57**	**0.19**	0.014 J-
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**2**	**9.6**	**29 J-**	0.15	**0.26 J-**	**3.5**	**1.1**	0.12 J-
Benzo[g,h,i]perylene	--	--	--	mg/kg	1.6 J	8	22 J-	0.15 J	0.2 J-	0.86	0.29 J	0.041 J-
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.66	**3.9**	**14 J-**	0.057	0.075 J-	0.9	0.31	0.035 J-
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.056 U	0.021 U	0.12 UJ	0.013 UJ	0.012 UJ	0.011 U	0.011 U	0.012 UJ
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.042 U	0.016 U	0.093 UJ	0.0095 UJ	0.0092 UJ	0.0087 U	0.0086 U	0.0088 UJ
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.07 U	0.15 J	0.15 UJ	0.016 UJ	0.015 UJ	0.014 U	0.014 U	0.015 UJ
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.055 U	0.021 U	0.12 UJ	0.012 UJ	0.015 J-	0.011 U	0.011 U	0.012 UJ
Caprolactam	3100	40000	0.25	mg/kg	0.13 U	0.05 U	0.28 UJ	0.029 UJ	0.028 UJ	0.066 J	0.039 J	0.027 UJ
Carbazole	--	--	--	mg/kg	0.4 J	0.87	2.8 J-	0.018 J	0.016 J-	0.065 J	0.028 J	0.0093 UJ
Chrysene	**16**	290	1.2	mg/kg	2.3	8.2	**24 J-**	0.13 J	0.14 J-	1.8	0.57	0.056 J-
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.43**	**1.9**	**5.2 J-**	0.021 U	**0.057 J-**	**0.37**	**0.13**	**0.019 J-**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.054 U	0.095 J	0.59 J-	0.012 U	0.012 UJ	0.012 J	0.011 U	0.011 UJ
Diethyl phthalate	5100	66000	0.61	mg/kg	0.051 U	0.02 U	0.11 UJ	0.011 UJ	0.011 UJ	0.01 U	0.01 U	0.011 UJ

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-033	CFSB-033	CFSB-034	CFSB-034	CFSB-034	CFSB-035	CFSB-035	CFSB-035
				Sample Date:	5/23/2016	5/23/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-033-SO-0.5-2	CFSB-033-SO-10-12	CFSB-034-SO-0-0.5	CFSB-034-SO-0.5-2	CFSB-034-SO-10-12	CFSB-035-SO-0-0.5	CFSB-035-SO-0.5-2	CFSB-035-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.052 U	0.02 U	0.11 UJ	0.012 UJ	0.011 UJ	0.011 U	0.011 U	0.011 UJ
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.054 U	0.021 U	0.12 UJ	0.012 UJ	0.012 UJ	0.011 U	0.011 U	0.011 UJ
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.091 U	0.035 U	0.2 UJ	0.02 UJ	0.02 UJ	0.019 U	0.018 U	0.019 UJ
Fluoranthene	**240**	3000	8.9	mg/kg	2.2	7.3	35 J-	0.18 J	0.14 J-	0.78	0.29 J	0.017 J-
Fluorene	240	3000	0.54	mg/kg	0.039 U	0.19 J	1.1 J-	0.0088 U	0.01 J-	0.014 J	0.0079 U	0.0082 UJ
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.073 U	0.028 U	0.16 UJ	0.016 UJ	0.016 UJ	0.015 U	0.015 U	0.015 UJ
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.05 U	0.019 U	0.11 UJ	0.011 UJ	0.011 UJ	0.01 U	0.01 U	0.011 UJ
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.11 U	0.043 U	0.25 UJ	0.025 UJ	0.024 UJ	0.023 U	0.023 U	0.023 UJ
Hexachloroethane	1.8	8	0.0002	mg/kg	0.066 U	0.025 U	0.14 UJ	0.015 UJ	0.014 UJ	0.013 U	0.013 U	0.014 UJ
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**1.4**	**7.7**	**23 J**	0.13	**0.2 J**	**1**	**0.32**	0.045 J
Isophorone	570	2400	0.026	mg/kg	0.039 U	0.015 U	0.085 UJ	0.0086 UJ	0.0083 UJ	0.016 J	0.0078 U	0.008 UJ
Naphthalene	**3.8**	17	0.00054	mg/kg	0.046 U	0.06 J	0.45 J-	0.01 U	0.0099 UJ	0.014 J	0.0092 U	0.0095 UJ
Nitrobenzene	5.1	22	0.000092	mg/kg	0.056 U	0.022 U	0.12 UJ	0.013 UJ	0.012 UJ	0.012 U	0.011 U	0.012 UJ
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.06 U	0.023 U	0.13 UJ	0.013 UJ	0.013 UJ	0.012 U	0.012 U	0.013 UJ
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.16 U	0.063 U	0.36 UJ	0.036 UJ	0.035 UJ	0.033 U	0.033 U	0.034 UJ
Pentachlorophenol	1	4	0.000057	mg/kg	0.22 U	0.083 U	0.48 UJ	0.049 UJ	0.047 UJ	0.045 U	0.044 U	0.045 UJ
Phenanthrene	--	--	--	mg/kg	0.66 J	3	18 J-	0.12 J	0.1 J-	0.3 J	0.13 J	0.01 UJ
Phenol	1900	25000	0.33	mg/kg	0.059 U	0.023 U	0.13 UJ	0.013 UJ	0.013 UJ	0.012 U	0.012 U	0.012 UJ
Pyrene	**180**	2300	1.3	mg/kg	1.7 J	7.8	36 J-	0.25 J	0.17 J-	0.73	0.26 J	0.023 J-

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-036	CFSB-036	CFSB-036	CFSB-037	CFSB-037	CFSB-037	CFSB-038	CFSB-038
			Sample Date:		5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/21/2016	5/21/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-036-SO-0-0.5	CFSB-036-SO-0.5-2	CFSB-036-SO-10-12	CFSB-037-SO-0-0.5	CFSB-037-SO-0.5-2	CFSB-037-SO-10-12	CFSB-038-SO-0-0.5	CFSB-038-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.034 U	0.032 UJ	0.034 U	0.032 U	0.031 UJ	0.033 U	0.031 U	0.029 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.029 U	0.028 UJ	0.029 U	0.027 U	0.027 UJ	0.029 U	0.027 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.11 U	0.1 UJ	0.11 U	0.099 U	0.097 UJ	0.1 U	0.098 U	0.092 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.016 U	0.015 UJ	0.016 U	0.015 U	0.015 UJ	0.016 U	0.015 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.037 U	0.035 UJ	0.037 U	0.035 U	0.034 UJ	0.037 U	0.034 U	0.032 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.039 U	0.037 UJ	0.039 U	0.037 U	0.036 UJ	0.039 U	0.036 U	0.034 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.011 UJ	0.011 U	0.011 U	0.01 UJ	0.011 U	0.01 U	0.0098 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0093 U	0.0088 UJ	0.0093 U	0.0087 U	0.0086 UJ	0.0093 U	0.0086 U	0.0081 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.087 U	0.082 UJ	0.087 U	0.081 U	0.08 UJ	0.086 U	0.08 U	0.076 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.3 U	0.28 UJ	0.3 U	0.28 U	0.27 UJ	0.3 U	0.28 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.016 U	0.015 UJ	0.016 U	0.015 U	0.014 UJ	0.016 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.021 U	0.02 UJ	0.021 U	0.02 U	0.019 UJ	0.021 U	0.019 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.009 U	0.0085 UJ	0.0089 U	0.0084 U	0.0082 UJ	0.0089 U	0.0083 U	0.0078 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.01 U	0.0095 UJ	0.01 U	0.0094 U	0.0092 UJ	0.01 U	0.0093 U	0.0087 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.018 J	0.0083 UJ	0.0087 U	0.0082 U	0.008 UJ	0.0087 U	0.03 J	0.017 J
2-Methylphenol	320	4100	0.075	mg/kg	0.017 U	0.016 UJ	0.017 U	0.016 U	0.016 UJ	0.017 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.013 U	0.012 UJ	0.013 U	0.012 U	0.012 UJ	0.013 U	0.012 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.013 UJ	0.013 U	0.012 U	0.012 UJ	0.013 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.011 U	0.01 UJ	0.01 U	0.0098 U	0.0097 UJ	0.01 U	0.0097 U	0.0092 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.044 U	0.042 UJ	0.044 U	0.041 U	0.04 UJ	0.044 U	0.041 U	0.038 U
3-Nitroaniline	--	--	--	mg/kg	0.012 U	0.011 UJ	0.012 U	0.011 U	0.011 UJ	0.012 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.11 U	0.1 UJ	0.11 U	0.099 U	0.097 UJ	0.1 U	0.097 U	0.092 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 UJ	0.012 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.017 U	0.016 UJ	0.017 U	0.016 U	0.016 UJ	0.017 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.01 U	0.0096 UJ	0.01 U	0.0095 U	0.0093 UJ	0.01 U	0.0094 U	0.0088 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 UJ	0.012 U	0.011 U	0.011 UJ	0.012 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.015 U	0.014 UJ	0.015 U	0.014 U	0.014 UJ	0.015 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.19 U	0.18 UJ	0.19 U	0.18 U	0.17 UJ	0.19 U	0.18 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.065 J	0.014 J-	0.0095 U	0.013 J	0.0088 UJ	0.0095 U	0.22 J	0.12 J
Acenaphthylene	--	--	--	mg/kg	0.01 U	0.0096 UJ	0.01 U	0.0095 U	0.0093 UJ	0.01 U	0.0094 U	0.0088 U
Acetophenone	780	12000	0.058	mg/kg	0.0091 J	0.0081 UJ	0.0086 U	0.008 U	0.0079 UJ	0.0085 U	0.0079 U	0.0075 U
Anthracene	1800	23000	5.8	mg/kg	0.14 J	0.056 J-	0.037 U	0.035 U	0.034 UJ	0.037 U	0.33 J	0.2 J
Atrazine	2.4	10	0.0002	mg/kg	0.018 U	0.017 UJ	0.018 U	0.016 U	0.016 UJ	0.017 U	0.016 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.03 U	0.029 UJ	0.03 U	0.028 U	0.028 UJ	0.03 U	0.028 U	0.026 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**1**	**0.49 J-**	0.033 U	0.16	0.1 J-	0.033 U	**1.2**	**0.83**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**1**	**0.42 J-**	0.012 U	**0.2**	**0.11 J-**	0.014 J	**1.3**	**0.86**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**3.9**	**1.8 J-**	0.015 U	**0.31**	0.16 J-	0.018 J	**2.9**	**2.2**
Benzo[g,h,i]perylene	--	--	--	mg/kg	2	0.97 J-	0.023 U	0.25 J	0.13 J-	0.023 U	1.4	1.1 J+
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	1.2	0.57 J-	0.017 U	0.11	0.053 J-	0.017 U	0.97	0.64
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 UJ	0.012 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0093 U	0.0088 UJ	0.0093 U	0.0087 U	0.0086 UJ	0.0093 U	0.0086 U	0.0081 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.067 J+	0.015 UJ	0.015 U	0.087 J+	0.069 J	0.015 U	0.014 U	0.013 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.98	0.22 J-	0.012 U	0.057 J	0.034 J-	0.012 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.028 U	0.027 UJ	0.028 U	0.027 U	0.026 UJ	0.028 U	0.026 U	0.025 UJ
Carbazole	--	--	--	mg/kg	0.12 J	0.059 J-	0.0098 U	0.022 J	0.013 J-	0.0097 U	0.2 J	0.12 J
Chrysene	**16**	290	1.2	mg/kg	2.3	1.1 J-	0.011 U	0.23 J	0.12 J-	0.017 J	1.9	1.4
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.65**	**0.35 J-**	0.02 U	**0.05**	**0.027 J-**	0.02 U	**0.42**	**0.36 J+**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.037 J	0.011 UJ	0.012 U	0.011 U	0.011 UJ	0.012 U	0.081 J	0.047 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.011 UJ	0.011 U	0.011 U	0.01 UJ	0.011 U	0.01 U	0.0098 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-036	CFSB-036	CFSB-037	CFSB-037	CFSB-037	CFSB-038	CFSB-038
					Sample Date:	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/21/2016	5/21/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFSB-036-SO-0-0.5	CFSB-036-SO-0.5-2	CFSB-036-SO-10-12	CFSB-037-SO-0-0.5	CFSB-037-SO-0.5-2	CFSB-037-SO-10-12	CFSB-038-SO-0-0.5	CFSB-038-SO-0.5-2
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.012 U	0.013 J-	0.012 U	0.011 U	0.011 UJ	0.012 U	0.011 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.02 U	0.019 UJ	0.02 U	0.019 U	0.018 UJ	0.02 U	0.019 U	0.017 U
Fluoranthene	**240**	3000	8.9	mg/kg		1.6	0.62 J-	0.012 U	0.28 J	0.15 J-	0.015 J	2.2	1.5
Fluorene	240	3000	0.54	mg/kg		0.057 J	0.01 J-	0.0086 U	0.01 J	0.0079 UJ	0.0085 U	0.17 J	0.09 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.016 U	0.015 UJ	0.016 U	0.015 U	0.015 UJ	0.016 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.011 U	0.011 UJ	0.011 U	0.01 U	0.01 UJ	0.011 U	0.01 U	0.0097 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.025 UJ	0.023 UJ	0.025 UJ	0.023 UJ	0.023 UJ	0.024 UJ	0.023 U	0.021 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.014 U	0.014 UJ	0.014 U	0.014 U	0.013 UJ	0.014 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**2.2**	**1.1 J**	0.026 U	**0.28**	0.14 J	0.026 U	**1.4**	**1.2 J+**
Isophorone	570	2400	0.026	mg/kg		0.069 J	0.008 UJ	0.0085 U	0.011 J	0.0078 UJ	0.0084 U	0.0078 U	0.0074 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.052 J	0.0095 UJ	0.01 U	0.0094 U	0.0092 UJ	0.01 U	0.062 J	0.039 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 UJ	0.012 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.013 U	0.013 UJ	0.013 U	0.012 U	0.012 UJ	0.013 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.036 U	0.034 UJ	0.036 U	0.034 U	0.033 UJ	0.036 U	0.033 U	0.031 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.048 U	0.045 UJ	0.048 U	0.045 U	0.044 UJ	0.047 U	0.044 U	0.042 U
Phenanthrene	--	--	--	mg/kg		0.78	0.24 J-	0.01 U	0.14 J	0.094 J-	0.01 U	1.5	0.93
Phenol	1900	25000	0.33	mg/kg		0.016 J	0.012 UJ	0.013 U	0.012 U	0.012 UJ	0.013 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		1.6	0.66 J-	0.018 U	0.29 J	0.17 J-	0.018 U	2.4	1.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-038	CFSB-040	CFSB-040	CFSB-040	CFSB-042	CFSB-042	CFSB-042	CFSB-044
				Sample Date:	5/21/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-038-SO-10-12	CFSB-040-SO-0-0.5	CFSB-040-SO-0.5-2	CFSB-040-SO-10-12	CFSB-042-SO-0-0.5	CFSB-042-SO-0.5-2	CFSB-042-SO-10-12	CFSB-044-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.029 U	1.5 U	0.15 U	0.15 U	0.32 U	0.15 U	0.029 U	0.62 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	1.3 U	0.13 U	0.13 U	0.28 U	0.13 U	0.026 U	0.54 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.092 U	4.7 U	0.47 U	0.47 U	1 U	0.48 U	0.092 U	1.9 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.73 U	0.072 U	0.072 U	0.15 U	0.073 U	0.014 U	0.3 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.032 U	1.7 U	0.16 U	0.16 U	0.35 U	0.17 U	0.032 U	0.68 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.034 U	1.8 U	0.17 U	0.17 U	0.37 U	0.18 U	0.034 U	0.72 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0098 U	0.5 U	0.05 U	0.05 U	0.11 U	0.051 U	0.0098 U	0.21 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0081 U	0.42 U	0.041 U	0.041 U	0.089 U	0.042 U	0.0081 U	0.17 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.076 U	3.9 U	0.39 U	0.38 U	0.83 U	0.39 U	0.076 U	1.6 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 UJ	13 U	1.3 U	1.3 U	2.8 U	1.4 U	0.26 U	5.5 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.7 U	0.069 U	0.069 U	0.15 U	0.071 U	0.014 U	0.29 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.94 U	0.093 U	0.093 U	0.2 U	0.095 U	0.018 U	0.38 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0078 U	0.4 U	0.04 U	0.04 U	0.085 U	0.041 U	0.0078 U	0.16 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0088 U	0.45 U	0.045 U	0.044 U	0.096 U	0.045 U	0.0087 U	0.18 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0076 U	1.4 J	0.29 J	0.41 J	0.4 J	0.1 J	0.0088 J	1.7 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.77 U	0.076 U	0.076 U	0.16 U	0.078 U	0.015 U	0.31 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.59 U	0.058 U	0.057 U	0.12 U	0.059 U	0.011 U	0.24 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.6 U	0.059 U	0.058 U	0.13 U	0.06 U	0.012 U	0.24 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0092 U	0.47 U	0.047 U	0.046 U	0.1 U	0.048 U	0.0092 U	0.19 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.038 U	2 U	0.2 U	0.19 U	0.42 U	0.2 U	0.038 U	0.81 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.53 U	0.052 U	0.052 U	0.11 U	0.053 U	0.01 U	0.21 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.092 UJ	4.7 U	0.47 U	0.46 U	1 U	0.48 U	0.092 U	1.9 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.56 U	0.055 U	0.055 U	0.12 U	0.056 U	0.011 U	0.23 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.76 U	0.075 U	0.075 U	0.16 U	0.077 U	0.015 U	0.31 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0089 U	0.46 U	0.045 U	0.045 U	0.097 U	0.046 U	0.0088 U	0.19 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.53 U	0.052 U	0.052 U	0.11 U	0.054 U	0.01 U	0.22 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.67 U	0.066 U	0.066 U	0.14 U	0.068 U	0.013 U	0.27 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	8.5 U	0.84 U	0.84 U	1.8 U	0.86 U	0.17 U	3.5 U
Acenaphthene	360	4500	0.55	mg/kg	0.0083 U	15 J	2.6	3.1	2.2 J	0.74 J	0.064 J	3.7 J
Acenaphthylene	--	--	--	mg/kg	0.0089 U	0.46 U	0.048 J	0.045 U	0.097 U	0.046 U	0.0088 U	0.19 U
Acetophenone	780	12000	0.058	mg/kg	0.0075 U	0.39 U	0.038 U	0.038 U	0.082 U	0.039 U	0.0075 U	0.16 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	22	4.6	4.6	9.5	1.9	0.2 J	7.6
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.79 U	0.078 U	0.077 U	0.17 U	0.079 U	0.015 U	0.32 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 U	1.4 U	0.13 U	0.13 U	0.29 U	0.14 U	0.026 U	0.55 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	**110**	**19**	**19**	**21**	**7.5**	**0.81**	**46**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.029 J**	**130**	**24**	**23**	**24**	**8.6**	**0.97**	**42**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.11	**150**	**26**	**25**	**31**	**11**	**1.3**	**62**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.028 J	99	23	26 J+	20	7	0.83 J+	33
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	**68**	**12**	**12**	**13**	**4.4**	0.43	**23**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.55 U	0.055 U	0.054 U	0.12 U	0.056 U	0.011 U	0.23 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0081 U	0.42 U	0.041 U	0.041 U	0.089 U	0.042 U	0.0081 U	0.17 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.013 U	0.69 U	0.068 U	0.068 U	0.15 U	0.07 U	0.013 U	0.28 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.55 U	0.054 U	0.054 U	0.12 U	0.055 U	0.011 U	0.22 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	1.3 U	0.13 U	0.13 UJ	0.27 U	0.13 U	0.025 UJ	0.52 U
Carbazole	--	--	--	mg/kg	0.0085 U	17 J	3	3.4	6.5	1.5 J	0.16 J	6.8 J
Chrysene	**16**	290	1.2	mg/kg	0.062 J	**130**	**25**	**24**	**28**	10	1.1	**57**
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	**28**	**4 J+**	**6.2 J+**	**5.4**	**1.9**	**0.21 J+**	**8.3 J+**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.01 U	4.8 J	1 J	1.1 J	0.88 J	0.26 J	0.025 J	1.5 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0098 U	0.5 U	0.05 U	0.05 U	0.11 U	0.051 U	0.0098 U	0.21 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-038	CFSB-040	CFSB-040	CFSB-040	CFSB-042	CFSB-042	CFSB-042	CFSB-044
				Sample Date:	5/21/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-038-SO-10-12	CFSB-040-SO-0-0.5	CFSB-040-SO-0.5-2	CFSB-040-SO-10-12	CFSB-042-SO-0-0.5	CFSB-042-SO-0.5-2	CFSB-042-SO-10-12	CFSB-044-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.52 U	0.051 U	0.051 U	0.11 U	0.052 U	0.01 U	0.21 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.01 U	0.53 U	0.052 U	0.052 U	0.11 U	0.054 U	0.01 U	0.22 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.9 U	0.089 U	0.089 U	0.19 U	0.091 U	0.017 U	0.37 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.047 J	170	35	38	46	14	1.7	75
Fluorene	240	3000	0.54	mg/kg	0.0075 U	10 J	2	2.3	1.9 J	0.5 J	0.051 J	2.2 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.72 U	0.071 U	0.071 U	0.15 U	0.072 U	0.014 U	0.29 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0097 U	0.5 U	0.049 U	0.049 U	0.11 U	0.05 U	0.0097 U	0.2 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.021 U	1.1 U	0.11 U	0.11 U	0.23 U	0.11 U	0.021 U	0.45 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.65 U	0.064 U	0.064 U	0.14 U	0.065 U	0.013 U	0.26 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.028 J	**100 J+**	**25 J+**	**25 J+**	**21 J+**	**7.1 J+**	**0.82 J+**	**37 J+**
Isophorone	570	2400	0.026	mg/kg	0.0074 U	0.38 U	0.038 U	0.037 U	0.081 U	0.038 U	0.0074 U	0.16 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0088 U	3 J	0.62 J	1.1 J	0.72 J	0.24 J	0.02 J	**4 J**
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.56 U	0.055 U	0.055 U	0.12 U	0.056 U	0.011 U	0.23 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.6 UJ	0.059 UJ	0.058 U	0.13 UJ	0.06 UJ	0.012 U	0.24 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.031 U	1.6 U	0.16 U	0.16 U	0.34 U	0.16 U	0.031 U	0.66 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 UJ	2.1 U	0.21 U	0.21 U	0.46 U	0.22 U	0.042 U	0.87 U
Phenanthrene	--	--	--	mg/kg	0.023 J	120	27	25	32	9.4	0.95	39
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.58 U	0.057 U	0.057 U	0.12 U	0.058 U	0.011 U	0.24 U
Pyrene	**180**	2300	1.3	mg/kg	0.055 J	**220**	39	33	57	19	1.6	86

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-044	CFSB-044	CFSB-045	CFSB-045	CFSB-045	CFSB-046	CFSB-046	CFSB-046
			Sample Date:		5/20/2016	5/20/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/20/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-044-SO-0.5-2.0	CFSB-044-SO-10-12	CFSB-045-SO-0-0.5	CFSB-045-SO-0.5-2	CFSB-045-SO-10-12	CFSB-046-SO-0-0.5	CFSB-046-SO-0.5-2.0	CFSB-046-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.31 U	0.054 J	0.15 U	0.15 U	0.059 U	0.029 U	0.03 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.27 U	0.026 U	0.13 U	0.13 U	0.051 U	0.026 U	0.026 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.97 U	0.093 U	0.46 U	0.46 U	0.18 U	0.092 U	0.093 U	0.094 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.15 UJ	0.014 U	0.071 U	0.071 U	0.028 U	0.014 U	0.014 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.34 U	0.033 U	0.16 U	0.16 U	0.065 U	0.032 U	0.033 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.36 U	0.035 U	0.17 U	0.17 U	0.069 U	0.034 U	0.035 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.1 U	0.0099 U	0.049 U	0.049 U	0.02 U	0.0098 U	0.0099 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.086 U	0.0082 U	0.041 U	0.041 U	0.016 U	0.0081 U	0.0082 U	0.0083 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.8 U	0.076 U	0.38 U	0.38 U	0.15 U	0.076 U	0.077 U	0.077 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	2.8 U	0.26 U	1.3 U	1.3 U	0.52 U	0.26 U	0.26 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.14 U	0.014 U	0.069 U	0.069 U	0.027 U	0.014 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.19 U	0.018 U	0.092 U	0.093 U	0.037 U	0.018 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.083 U	0.0079 U	0.039 U	0.039 U	0.016 U	0.0078 U	0.0079 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.092 U	0.0088 U	0.044 U	0.044 U	0.018 U	0.0087 U	0.0089 U	0.0089 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.71 J	0.29 J	0.1 J	0.081 J	0.059 J	0.014 J	0.026 J	0.0077 U
2-Methylphenol	320	4100	0.075	mg/kg	0.16 U	0.015 U	0.076 U	0.076 U	0.03 U	0.015 U	0.015 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.12 U	0.011 U	0.057 U	0.057 U	0.023 U	0.011 U	0.011 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.12 U	0.012 U	0.058 U	0.058 U	0.023 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.097 U	0.0092 U	0.046 U	0.046 U	0.018 U	0.0092 U	0.0093 U	0.0093 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.41 U	0.039 U	0.19 U	0.19 U	0.077 U	0.038 U	0.039 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.11 U	0.01 U	0.051 U	0.052 U	0.02 U	0.01 U	0.01 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.97 U	0.093 U	0.46 U	0.46 U	0.18 U	0.092 U	0.093 U	0.093 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.11 U	0.011 U	0.055 U	0.055 U	0.022 U	0.011 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.16 U	0.015 U	0.074 U	0.075 U	0.03 U	0.015 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.094 U	0.0089 U	0.045 U	0.045 U	0.018 U	0.0088 U	0.009 U	0.009 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.11 U	0.01 U	0.052 U	0.052 U	0.021 U	0.01 U	0.01 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.14 U	0.013 U	0.066 U	0.066 U	0.026 U	0.013 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	1.7 UJ	0.17 U	0.83 U	0.84 U	0.33 U	0.17 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	3 J	0.09 J	0.82 J	0.72 J	0.49 J	0.097 J	0.021 J	0.0085 U
Acenaphthylene	--	--	--	mg/kg	0.094 U	0.0089 U	0.045 U	0.045 U	0.018 U	0.0088 U	0.009 U	0.009 U
Acetophenone	780	12000	0.058	mg/kg	0.079 U	0.0076 U	0.038 U	0.038 U	0.015 U	0.0075 U	0.0076 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg	7.6	0.033 U	1.4 J	1.3 J	0.93	0.22 J	0.033 U	0.033 U
Atrazine	2.4	10	0.0002	mg/kg	0.16 U	0.015 U	0.077 U	0.077 U	0.031 U	0.015 U	0.015 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.28 U	0.026 U	0.13 U	0.13 U	0.053 U	0.026 U	0.027 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**40**	0.092	**8.2**	**8**	**5.6**	**1.6**	**0.22**	0.14
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**34**	**0.091**	**11**	**10**	**7.6**	**2**	**0.27**	**0.15**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**48**	0.13	**14**	**14**	**10**	**2.8**	**0.34**	**0.22**
Benzo[g,h,i]perylene	--	--	--	mg/kg	24 J+	0.06 J	19 J+	17 J+	11 J+	2.1	0.24 J	0.15 J+
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**17**	0.054	**5**	**4.9**	**3.3**	1	0.16	0.092
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.11 U	0.011 U	0.054 U	0.054 U	0.021 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.086 U	0.0082 U	0.041 U	0.041 U	0.016 U	0.0081 U	0.0082 U	0.0083 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.14 U	0.014 U	0.26 J	0.068 U	0.027 U	0.013 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.11 U	0.011 U	0.31 J	0.22 J	0.061 J	0.011 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.26 U	0.025 U	0.12 UJ	0.13 UJ	0.05 U	0.025 U	0.025 U	0.025 UJ
Carbazole	--	--	--	mg/kg	7.3	0.01 J	1.2 J	1.1 J	0.81	0.22 J	0.025 J	0.019 J
Chrysene	**16**	290	1.2	mg/kg	**50**	0.11 J	10	10	7.3	2.1	0.27 J	0.18 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**7 J+**	0.018 U	**3.1 J+**	**3.4 J+**	**2.3 J+**	**0.52 J+**	**0.054 J+**	**0.044 J+**
Dibenzofuran	**7.3**	100	0.015	mg/kg	1.2 J	0.068 J	0.37 J	0.34 J	0.22 J	0.041 J	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.1 U	0.0099 U	0.049 U	0.049 U	0.02 U	0.0098 U	0.0099 U	0.01 U

Preliminary Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-044	CFSB-045	CFSB-045	CFSB-045	CFSB-046	CFSB-046	CFSB-046
					Sample Date:	5/20/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/20/2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-044-SO-0.5-2.0	CFSB-045-SO-0-0.5	CFSB-045-SO-0.5-2	CFSB-045-SO-10-12	CFSB-046-SO-0-0.5	CFSB-046-SO-0.5-2.0	CFSB-046-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg	0.11 U	0.01 U	0.05 U	0.05 U	0.02 U	0.01 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.11 U	0.01 U	0.052 U	0.052 U	0.021 U	0.01 U	0.01 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.18 U	0.018 U	0.088 U	0.088 U	0.035 U	0.017 U	0.018 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg	87	0.12 J	14	13	11	2.3	0.28 J	0.21 J
Fluorene	240	3000	0.54	mg/kg	1.6 J	0.043 J	0.62 J	0.52 J	0.37 J	0.074 J	0.014 J	0.0076 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.15 U	0.014 U	0.07 U	0.07 U	0.028 U	0.014 U	0.014 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.1 U	0.0098 U	0.049 U	0.049 U	0.019 U	0.0097 U	0.0098 U	0.0099 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.23 U	0.022 U	0.11 U	0.11 U	0.043 U	0.021 U	0.022 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.13 U	0.013 U	0.063 U	0.064 U	0.025 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**29 J+**	0.06 J+	**16 J+**	**15 J+**	**10 J+**	**2 J+**	**0.26 J+**	0.16 J+
Isophorone	570	2400	0.026	mg/kg	0.078 U	0.0074 U	0.076 J	0.037 U	0.015 U	0.0074 U	0.0075 U	0.0075 U
Naphthalene	**3.8**	17	0.00054	mg/kg	1.9 J	0.61	0.29 J	0.32 J	0.23 J	0.038 J	0.078 J	0.0089 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.11 U	0.011 U	0.055 U	0.055 U	0.022 U	0.011 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.12 U	0.012 U	0.058 U	0.058 U	0.023 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.33 U	0.031 U	0.16 U	0.16 U	0.063 U	0.031 U	0.032 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.44 U	0.042 U	0.21 U	0.21 U	0.083 U	0.042 U	0.042 U	0.042 U
Phenanthrene	--	--	--	mg/kg	35	0.094 J	6.9	6.6	4.7	1.3	0.18 J	0.11 J
Phenol	1900	25000	0.33	mg/kg	0.12 U	0.011 U	0.057 U	0.057 U	0.023 U	0.011 U	0.011 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg	52	0.15 J	12	13	8.8	2.6	0.36	0.21 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-048	CFSB-048	CFSB-048	CFSB-049	CFSB-049	CFSB-050	CFSB-050	CFSB-050
				Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/28/2016	5/28/2016	5/21/2016	5/21/2016	5/21/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-048-SO-0-0.5	CFSB-048-SO-0.5-2.0	CFSB-048-SO-10-12	CFSB-049-SO-0.5-2	CFSB-049-SO-10-12	CFSB-050-SO-0-0.5	CFSB-050-SO-0.5-2	CFSB-050-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.33 U	0.077 J	0.033 J	0.03 UJ	0.029 UJ	0.034 J	0.032 U	0.029 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.28 U	0.027 U	0.026 U	0.026 UJ	0.025 UJ	0.027 U	0.028 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	1 U	0.098 U	0.095 U	0.095 UJ	0.091 UJ	0.098 U	0.1 U	0.092 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.16 U	0.015 UJ	0.015 U	0.015 UJ	0.014 UJ	0.015 U	0.015 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.36 U	0.035 U	0.033 U	0.033 UJ	0.032 UJ	0.035 U	0.035 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.38 U	0.037 U	0.035 U	0.035 UJ	0.034 UJ	0.037 U	0.037 U	0.034 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.11 U	0.01 U	0.01 U	0.01 UJ	0.0097 UJ	0.01 U	0.011 U	0.0098 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.09 U	0.0087 U	0.0084 U	0.0084 UJ	0.008 UJ	0.0087 U	0.0088 U	0.0082 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.84 U	0.081 U	0.078 U	0.078 UJ	0.075 UJ	0.081 U	0.082 U	0.076 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	2.9 U	0.28 U	0.27 U	0.27 UJ	0.26 UJ	0.28 U	0.28 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.15 U	0.015 U	0.014 U	0.014 UJ	0.014 UJ	0.015 U	0.015 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.2 U	0.02 U	0.019 U	0.019 UJ	0.018 UJ	0.02 U	0.02 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.087 U	0.0083 U	0.008 U	0.0081 UJ	0.0077 UJ	0.0083 U	0.0085 U	0.0078 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.097 U	0.0093 U	0.009 U	0.009 UJ	0.0087 UJ	0.0093 U	0.0095 U	0.0088 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.26 J	0.39	0.19 J	0.0079 UJ	0.0075 UJ	0.1 J	0.0083 U	0.0076 U
2-Methylphenol	320	4100	0.075	mg/kg	0.17 U	0.016 U	0.015 U	0.016 UJ	0.015 UJ	0.016 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.13 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.13 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.013 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.1 U	0.0098 U	0.0094 U	0.0095 UJ	0.0091 UJ	0.0098 U	0.011 J	0.0092 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.43 U	0.041 U	0.04 U	0.04 UJ	0.038 UJ	0.041 U	0.042 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.11 U	0.011 U	0.011 U	0.011 UJ	0.01 UJ	0.011 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	1 U	0.098 U	0.095 U	0.095 UJ	0.091 UJ	0.098 U	0.1 U	0.092 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.12 U	0.012 U	0.011 U	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.16 U	0.016 U	0.015 U	0.015 UJ	0.015 UJ	0.016 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.098 U	0.0095 U	0.0091 U	0.0092 UJ	0.0088 UJ	0.0095 U	0.0096 U	0.0089 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.11 U	0.011 U	0.011 U	0.011 UJ	0.01 UJ	0.011 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.14 U	0.014 U	0.013 U	0.013 UJ	0.013 UJ	0.014 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	1.8 U	0.18 UJ	0.17 U	0.17 UJ	0.16 UJ	0.18 U	0.18 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	1.6 J	0.25 J	0.062 J	0.0086 UJ	0.0082 UJ	0.58	0.021 J	0.011 J
Acenaphthylene	--	--	--	mg/kg	0.098 U	0.0095 U	0.0091 U	0.0092 UJ	0.0088 UJ	0.0095 U	0.0096 U	0.0089 U
Acetophenone	780	12000	0.058	mg/kg	0.083 U	0.008 U	0.0077 U	0.0078 UJ	0.0074 UJ	0.008 U	0.0082 U	0.0075 U
Anthracene	1800	23000	5.8	mg/kg	4.2	0.36 J	0.034 U	0.034 UJ	0.032 UJ	0.9	0.044 J	0.033 U
Atrazine	2.4	10	0.0002	mg/kg	0.17 U	0.016 U	0.016 U	0.016 UJ	0.015 UJ	0.016 U	0.017 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.29 U	0.028 U	0.027 U	0.027 UJ	0.026 UJ	0.028 U	0.029 U	0.026 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**29**	**2.6**	0.031 J	0.03 UJ	0.028 UJ	**3.3**	**0.25**	0.1
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**37**	**3.3**	**0.029 J**	**0.024 J-**	0.01 UJ	**4.6**	**0.3**	**0.13**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**47**	**3.8**	0.037	0.033 J-	0.013 UJ	**5.3**	**0.43**	**0.18**
Benzo[g,h,i]perylene	--	--	--	mg/kg	35 J+	3.2 J+	0.029 J	0.028 J-	0.02 UJ	4.5	0.25 J	0.086 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**17**	**1.7**	0.018 J	0.016 UJ	0.015 UJ	**2.2**	0.21	0.08
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.12 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.09 U	0.0087 U	0.0084 U	0.0084 UJ	0.008 UJ	0.0087 U	0.0088 U	0.0082 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.15 U	0.014 U	0.014 U	0.014 UJ	0.013 UJ	0.014 U	0.015 U	0.062 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.12 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	3.3	1.9	6.3
Caprolactam	3100	40000	0.25	mg/kg	0.27 U	0.026 U	0.026 U	0.026 UJ	0.025 UJ	0.026 U	0.027 U	0.025 UJ
Carbazole	--	--	--	mg/kg	3.2 J	0.27 J	0.0088 U	0.0088 UJ	0.0085 UJ	0.65	0.036 J	0.015 J
Chrysene	**16**	290	1.2	mg/kg	**34**	3.1	0.027 J	0.045 J-	0.015 J-	3.8	0.33 J	0.13 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**8.6 J+**	**0.85 J+**	0.018 U	0.019 UJ	0.018 UJ	**1.2**	**0.07**	**0.021 J**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.48 J	0.11 J	0.036 J	0.011 UJ	0.01 UJ	0.3 J	0.011 U	0.01 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.11 U	0.01 U	0.01 U	0.01 UJ	0.0097 UJ	0.01 U	0.011 U	0.0098 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-048	CFSB-048	CFSB-049	CFSB-049	CFSB-050	CFSB-050	CFSB-050
					Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/28/2016	5/28/2016	5/21/2016	5/21/2016	5/21/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-048-SO-0-0.5	CFSB-048-SO-0.5-2.0	CFSB-048-SO-10-12	CFSB-049-SO-0.5-2	CFSB-049-SO-10-12	CFSB-050-SO-0-0.5	CFSB-050-SO-0.5-2	CFSB-050-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.11 U	0.011 U	0.01 U	0.01 UJ	0.0099 UJ	0.011 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.11 U	0.011 U	0.011 U	0.011 UJ	0.01 UJ	0.08 J	0.19 J	0.66
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.19 U	0.019 U	0.018 U	0.018 UJ	0.017 UJ	0.019 U	0.019 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		36	4	0.029 J	0.025 J-	0.01 UJ	5.5	0.43	0.18 J
Fluorene	240	3000	0.54	mg/kg		0.88 J	0.11 J	0.022 J	0.0078 UJ	0.0074 UJ	0.46	0.017 J	0.0089 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.15 U	0.015 U	0.014 U	0.014 UJ	0.014 UJ	0.015 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.11 U	0.01 U	0.01 U	0.01 UJ	0.0096 UJ	0.01 U	0.011 U	0.0097 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.24 U	0.023 U	0.022 U	0.022 UJ	0.021 UJ	0.023 U	0.023 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.14 U	0.013 U	0.013 U	0.013 UJ	0.012 UJ	0.013 U	0.014 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**35 J+**	**3.7 J+**	0.026 J+	0.029 J	0.023 UJ	**4.4**	**0.25**	0.086
Isophorone	570	2400	0.026	mg/kg		0.082 U	0.0079 U	0.0076 U	0.0076 UJ	0.0073 UJ	0.035 J	0.027 J	0.0074 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.74 J	0.96	0.51	0.009 UJ	0.0087 UJ	0.68	0.013 J	0.0096 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.12 U	0.012 U	0.011 U	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.13 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.013 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.35 U	0.033 U	0.032 U	0.032 UJ	0.031 UJ	0.033 U	0.034 U	0.031 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.46 U	0.044 U	0.043 U	0.043 UJ	0.041 UJ	0.044 U	0.045 U	0.042 U
Phenanthrene	--	--	--	mg/kg		18	1.5	0.03 J	0.014 J-	0.0091 UJ	4	0.2 J	0.11 J
Phenol	1900	25000	0.33	mg/kg		0.12 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		45	3	0.037 J	0.04 J-	0.018 J-	5.1	0.45	0.18 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-051	CFSB-051	CFSB-051	CFSB-052	CFSB-052	CFSB-053	CFSB-053	CFSB-054
			Sample Date:		5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/31/2016	5/31/2016	5/28/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-051-SO-0-0.5	CFSB-051-SO-0.5-2	CFSB-051-SO-10-12	CFSB-052-SO-0.5-2	CFSB-052-SO-10-12	CFSB-053-SO-0.5-2	CFSB-053-SO-10-12	CFSB-054-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.032 U	0.03 UJ	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.028 U	0.026 UJ	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.094 U	0.094 U	0.094 U	0.093 U	0.093 U	0.1 U	0.093 UJ	0.095 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.014 U	0.014 U	0.014 U	0.016 U	0.014 UJ	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.033 U	0.033 U	0.033 R	0.033 U	0.036 U	0.033 UJ	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.035 U	0.035 U	0.034 R	0.035 U	0.038 U	0.035 UJ	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.01 U	0.0098 R	0.0099 U	0.011 U	0.0099 UJ	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0083 U	0.0083 U	0.0083 U	0.0082 R	0.0082 U	0.0089 U	0.0082 UJ	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.078 U	0.078 U	0.077 U	0.076 R	0.077 U	0.083 U	0.076 UJ	0.078 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.27 U	0.26 U	0.26 R	0.26 U	0.29 U	0.26 UJ	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 UJ	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.02 U	0.018 UJ	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.008 U	0.008 U	0.0079 U	0.0079 U	0.0079 U	0.0086 U	0.0079 UJ	0.008 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.009 U	0.009 U	0.0089 U	0.0088 R	0.0089 U	0.0096 U	0.0088 UJ	0.009 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.027 J	0.028 J	0.0077 U	0.0076 U	0.0077 U	0.0084 U	0.0077 UJ	0.011 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.015 U	0.015 R	0.015 U	0.017 U	0.015 UJ	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 UJ	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 R	0.012 U	0.013 U	0.012 UJ	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0094 U	0.0094 U	0.0093 U	0.0092 R	0.0093 U	0.01 U	0.0092 UJ	0.0094 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.042 U	0.039 UJ	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 UJ	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.094 U	0.094 U	0.093 U	0.092 R	0.093 U	0.1 U	0.093 UJ	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 UJ	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.015 U	0.015 R	0.015 U	0.016 U	0.015 UJ	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0091 U	0.0091 U	0.009 U	0.0089 U	0.009 U	0.0097 U	0.0089 UJ	0.0091 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 UJ	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 UJ	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.17 R	0.17 U	0.18 U	0.17 UJ	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.21 J	0.15 J	0.051 J	0.017 J	0.011 J	0.012 J	0.0084 UJ	0.1 J
Acenaphthylene	--	--	--	mg/kg	0.0091 U	0.0091 U	0.009 U	0.0089 U	0.009 U	0.0097 U	0.0089 UJ	0.0091 U
Acetophenone	780	12000	0.058	mg/kg	0.0077 U	0.0077 U	0.0077 J	0.0075 U	0.0076 U	0.0083 U	0.0076 UJ	0.0077 U
Anthracene	1800	23000	5.8	mg/kg	0.47	0.34 J	0.14 J	0.033 U	0.033 U	0.036 U	0.033 UJ	0.18 J
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U	0.017 U	0.015 UJ	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.027 U	0.026 U	0.027 U	0.029 U	0.026 UJ	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**3.4**	**2.2**	**1.1**	**0.34**	0.14	0.053	0.029 UJ	**1.2**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**3.6**	**2.3**	**1.1**	**0.33**	**0.14**	**0.047**	0.011 UJ	**1.6**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**5.4**	**3.6**	**1.8**	**0.42**	**0.17**	0.057	0.014 UJ	**2.1**
Benzo[g,h,i]perylene	--	--	--	mg/kg	3.5 J+	2.2 J+	1.1 J+	0.3 J+	0.12 J+	0.058 J	0.02 UJ	1.8
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**2**	1.2	0.59	0.18	0.074	0.032 J	0.015 UJ	0.72
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 UJ	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0083 U	0.0083 U	0.0083 U	0.0082 U	0.0082 U	0.0089 U	0.0082 UJ	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.096 J	0.087 J	0.051 J	0.014 U	0.014 U	0.015 U	0.014 UJ	0.049 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.098 J	0.03 J	0.056 J	0.011 U	0.011 U	0.012 U	0.011 UJ	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 UJ	0.025 UJ	0.025 UJ	0.025 UJ	0.025 UJ	0.027 U	0.025 UJ	0.026 U
Carbazole	--	--	--	mg/kg	0.4	0.3 J	0.11 J	0.064 J	0.028 J	0.0094 U	0.0086 UJ	0.19 J
Chrysene	**16**	290	1.2	mg/kg	4.4	3	1.4	0.42	0.17 J	0.046 J	0.0095 UJ	1.5
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.95 J+**	**0.57 J+**	**0.31 J+**	**0.071 J+**	**0.035 J+**	0.02 U	0.018 UJ	**0.46**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.085 J	0.067 J	0.021 J	0.016 J	0.011 U	0.011 U	0.011 UJ	0.032 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.01 U	0.0098 U	0.0099 U	0.011 U	0.0099 UJ	0.01 U

Preliminary - Under EPA and MBEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-051	CFSB-051	CFSB-052	CFSB-052	CFSB-053	CFSB-053	CFSB-054
					Sample Date:	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/31/2016	5/31/2016	5/28/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-051-SO-0-0.5	CFSB-051-SO-0.5-2	CFSB-051-SO-10-12	CFSB-052-SO-0.5-2	CFSB-052-SO-10-12	CFSB-053-SO-0.5-2	CFSB-053-SO-10-12	CFSB-054-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 UJ	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.014 J	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 UJ	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 UJ	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		5.4	4	1.7	1.2	0.4	0.094 J	0.01 UJ	1.9
Fluorene	240	3000	0.54	mg/kg		0.14 J	0.12 J	0.036 J	0.009 J	0.0087 J	0.009 J	0.0076 UJ	0.051 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 UJ	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0099 U	0.0099 U	0.0098 U	0.0097 U	0.0098 U	0.011 U	0.0098 UJ	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.024 UJ	0.022 UJ	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 UJ	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**3.6 J+**	**2.2 J+**	**1.1 J+**	**0.3 J+**	0.13 J+	0.053	0.023 UJ	**1.7**
Isophorone	570	2400	0.026	mg/kg		0.0076 U	0.0076 U	0.0075 U	3.3	0.076 J	0.0081 U	0.0075 UJ	0.0076 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.068 J	0.077 J	0.014 J	0.0088 U	0.0089 U	0.0096 U	0.0088 UJ	0.023 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 UJ	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 UJ	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.032 U	0.032 U	0.031 U	0.032 U	0.034 U	0.032 UJ	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.043 U	0.042 U	0.042 R	0.042 U	0.046 U	0.042 UJ	0.043 U
Phenanthrene	--	--	--	mg/kg		2.2	1.5	0.66	1.1	0.32 J	0.076 J	0.0092 UJ	0.97
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.011 U	0.011 R	0.011 U	0.012 U	0.011 UJ	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		5.2	3.9	1.6	1.1	0.36	0.096 J	0.016 UJ	2.1 J+

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-054	CFSB-054	CFSB-055	CFSB-055	CFSB-055	CFSB-057	CFSB-057	CFSB-057
			Sample Date:		5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-054-SO-0.5-2	CFSB-054-SO-10-12	CFSB-055-SO-0-0.5	CFSB-055-SO-0.5-2	CFSB-055-SO-10-12	CFSB-057-SO-0-0.5	CFSB-057-SO-0.5-2	CFSB-057-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.15 U	0.03 U	0.032 U	0.03 U	0.03 UJ	0.03 UJ
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.026 U	0.13 U	0.026 U	0.028 U	0.027 U	0.026 UJ	0.026 UJ
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.095 U	0.094 U	0.48 U	0.094 U	0.1 U	0.095 U	0.094 UJ	0.094 UJ
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.014 U	0.074 U	0.014 U	0.015 U	0.015 U	0.015 UJ	0.015 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.033 U	0.17 U	0.033 U	0.035 U	0.034 UJ	0.033 UJ	0.033 UJ
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.035 U	0.18 U	0.035 U	0.037 U	0.036 UJ	0.035 UJ	0.035 UJ
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.051 U	0.01 U	0.011 U	0.01 UJ	0.01 UJ	0.01 UJ
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0083 U	0.043 U	0.0083 U	0.0089 U	0.0084 U	0.0083 UJ	0.0083 UJ
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.078 U	0.077 U	0.4 U	0.077 U	0.083 U	0.078 U	0.078 UJ	0.078 UJ
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.27 U	1.4 U	0.27 U	0.28 U	0.27 UJ	0.27 UJ	0.27 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.072 U	0.014 U	0.015 U	0.014 U	0.014 UJ	0.014 UJ
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.096 U	0.019 U	0.02 U	0.019 U	0.019 UJ	0.019 UJ
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.008 U	0.041 U	0.008 U	0.0085 U	0.0081 U	0.008 UJ	0.008 UJ
2-Chlorophenol	39	580	0.0089	mg/kg	0.0091 U	0.0089 U	0.046 U	0.009 U	0.0095 U	0.0091 U	0.009 UJ	0.009 UJ
2-Methylnaphthalene	24	300	0.019	mg/kg	0.01 J	0.0078 U	0.081 J	0.024 J	0.017 J	0.0079 U	0.013 J-	0.0078 UJ
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.015 U	0.079 U	0.015 U	0.016 U	0.016 U	0.015 UJ	0.015 UJ
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.06 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.061 U	0.012 U	0.013 U	0.012 U	0.012 UJ	0.012 UJ
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.0094 U	0.048 U	0.0094 U	0.01 U	0.0095 U	0.0094 UJ	0.0094 UJ
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.039 U	0.2 U	0.039 U	0.042 U	0.04 U	0.039 UJ	0.039 UJ
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.01 U	0.054 U	0.01 U	0.011 U	0.011 U	0.01 UJ	0.01 UJ
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.094 U	0.48 U	0.094 U	0.1 U	0.095 UJ	0.094 UJ	0.094 UJ
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.057 U	0.011 U	0.012 U	0.011 U	0.011 UJ	0.011 UJ
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.078 U	0.015 U	0.016 U	0.015 U	0.015 UJ	0.015 UJ
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0092 U	0.0091 U	0.046 U	0.0091 U	0.0097 U	0.0092 U	0.0091 UJ	0.0091 UJ
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.054 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.068 U	0.013 U	0.014 U	0.013 U	0.013 UJ	0.013 UJ
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.87 U	0.17 U	0.18 U	0.17 U	0.17 UJ	0.17 UJ
Acenaphthene	360	4500	0.55	mg/kg	0.1 J	0.0085 U	0.69 J	0.22 J	0.16 J	0.047 J	0.093 J-	0.0085 UJ
Acenaphthylene	--	--	--	mg/kg	0.0092 U	0.0091 U	0.046 U	0.0091 U	0.0097 U	0.014 J	0.01 J-	0.0091 UJ
Acetophenone	780	12000	0.058	mg/kg	0.0078 U	0.0077 U	0.039 U	0.0077 U	0.0082 U	0.0078 U	0.0077 UJ	0.0077 UJ
Anthracene	1800	23000	5.8	mg/kg	0.18 J	0.033 U	1.2 J	0.35	0.22 J	0.12 J	0.23 J-	0.034 UJ
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.08 U	0.016 U	0.017 U	0.016 U	0.016 UJ	0.016 UJ
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.14 U	0.027 U	0.029 U	0.027 U	0.027 UJ	0.027 UJ
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**1.4**	0.029 U	**7.3**	**1.9**	**0.65**	**0.66**	**1.7 J-**	0.054 J-
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**1.7**	0.011 U	**9.4**	**2.4**	**0.74**	**0.9**	**2.3 J-**	**0.063 J-**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**2.2**	0.014 U	**11**	**3.2**	**1.1**	**1.2**	**3.1 J-**	0.11 J-
Benzo[g,h,i]perylene	--	--	--	mg/kg	1.9 J+	0.02 U	7.5	2.5 J+	0.81 J+	1.1 J+	3.4 J-	0.067 J-
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.99	0.015 U	**5.3**	1.1	0.41	0.48	1.2 J-	0.029 J-
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.056 U	0.011 U	0.012 U	0.011 U	0.011 UJ	0.011 UJ
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0083 U	0.043 U	0.0083 U	0.0089 U	0.0084 U	0.0083 UJ	0.0083 UJ
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.052 J+	0.014 U	0.07 U	0.065 J+	0.1 J+	0.14 J+	0.014 UJ	0.072 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.056 U	0.011 U	0.012 U	0.017 J+	0.02 J-	0.011 UJ
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.025 U	0.13 U	0.025 U	0.027 U	0.026 U	0.025 UJ	0.025 UJ
Carbazole	--	--	--	mg/kg	0.21 J	0.0087 U	1.2 J	0.35	0.17 J	0.18 J	0.28 J-	0.01 J-
Chrysene	**16**	290	1.2	mg/kg	1.7	0.0096 U	9.7	2.5	0.91	1	2.3 J-	0.07 J-
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.45 J+**	0.018 U	**1.9**	**0.61 J+**	**0.2 J+**	**0.25 J+**	**0.67 J-**	0.018 UJ
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.029 J	0.011 U	0.2 J	0.081 J	0.064 J	0.016 J	0.032 J-	0.011 UJ
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.051 U	0.01 U	0.011 U	0.01 U	0.01 UJ	0.01 UJ

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-054	CFSB-055	CFSB-055	CFSB-055	CFSB-057	CFSB-057	CFSB-057
					Sample Date:	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-054-SO-0.5-2	CFSB-054-SO-10-12	CFSB-055-SO-0-0.5	CFSB-055-SO-0.5-2	CFSB-055-SO-10-12	CFSB-057-SO-0-0.5	CFSB-057-SO-0.5-2	CFSB-057-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.052 U	0.01 U	0.011 U	0.01 U	0.01 UJ	0.01 UJ
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.054 U	0.011 U	0.011 U	0.011 U	0.019 J-	0.011 UJ
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.092 U	0.018 U	0.019 U	0.018 U	0.018 UJ	0.018 UJ
Fluoranthene	**240**	3000	8.9	mg/kg		2.1	0.01 U	13	3.2	1.4	1.3	2.6 J-	0.093 J-
Fluorene	240	3000	0.54	mg/kg		0.054 J	0.0077 U	0.41 J	0.14 J	0.11 J	0.03 J	0.054 J-	0.0077 UJ
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.073 UJ	0.014 U	0.015 U	0.014 U	0.014 UJ	0.014 UJ
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.0099 U	0.051 U	0.0099 U	0.011 U	0.01 U	0.0099 UJ	0.0099 UJ
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 UJ	0.022 UJ	0.11 UJ	0.022 UJ	0.023 UJ	0.022 UJ	0.022 UJ	0.022 UJ
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.066 U	0.013 U	0.014 U	0.013 U	0.013 UJ	0.013 UJ
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**1.7**	0.023 U	**7.2**	**2.3**	**0.76**	**0.93**	**3.2 J**	0.068 J
Isophorone	570	2400	0.026	mg/kg		0.0077 U	0.0076 U	0.039 U	0.0076 U	0.0081 U	0.0077 U	0.0076 UJ	0.0076 UJ
Naphthalene	**3.8**	17	0.00054	mg/kg		0.02 J	0.0089 U	0.14 J	0.055 J	0.04 J	0.015 J	0.027 J-	0.009 UJ
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.057 U	0.011 U	0.012 U	0.011 U	0.011 UJ	0.011 UJ
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.061 U	0.012 U	0.013 U	0.012 U	0.012 UJ	0.012 UJ
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.032 U	0.16 U	0.032 U	0.034 U	0.032 U	0.032 UJ	0.032 UJ
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.043 U	0.22 U	0.043 U	0.045 U	0.3 J	0.17 J-	0.043 UJ
Phenanthrene	--	--	--	mg/kg		1	0.0094 U	6.3	1.8	1	0.52	1.2 J-	0.059 J-
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.059 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ
Pyrene	**180**	2300	1.3	mg/kg		2.5	0.016 U	15	3.6	1.4	1.3	3.2 J-	0.1 J-

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-059	CFSB-059	CFSB-059	CFSB-059	CFSB-060	CFSB-060	CFSB-060	CFSB-062
			Sample Date:		5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/27/2016	5/27/2016	5/27/2016	6/2/2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-DUP8-SO	CFSB-059-SO-0-0.5	CFSB-059-SO-0.5-2	CFSB-059-SO-10-12	CFSB-060-SO-0-0.5	CFSB-060-SO-0.5-2	CFSB-060-SO-10-12	CFSB-062-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.031 U	0.03 U	0.03 U	0.029 U	0.029 U	0.033 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.027 U	0.027 U	0.026 U	0.026 U	0.026 U	0.026 U	0.029 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.095 U	0.096 U	0.097 U	0.094 U	0.094 U	0.092 U	0.092 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.034 U	0.034 U	0.033 U	0.033 U	0.032 U	0.032 U	0.036 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.036 U	0.036 U	0.035 U	0.035 U	0.034 U	0.034 U	0.038 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.0098 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0084 U	0.0086 U	0.0083 U	0.0083 U	0.0081 U	0.0081 U	0.0091 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.079 U	0.079 U	0.08 U	0.077 U	0.077 U	0.075 U	0.076 U	0.085 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.27 U	0.28 U	0.27 U	0.27 U	0.26 U	0.26 U	0.29 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.021 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.0081 U	0.0083 U	0.008 U	0.008 U	0.0078 U	0.0078 U	0.0088 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0091 U	0.0091 U	0.0092 U	0.009 U	0.009 U	0.0087 U	0.0088 U	0.0098 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.015 J	0.023 J	0.008 U	0.0078 U	0.0078 U	0.0076 U	0.0076 U	0.009 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.0095 U	0.0097 U	0.0094 U	0.0094 U	0.0091 U	0.0092 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.04 U	0.041 U	0.039 U	0.039 U	0.038 U	0.038 U	0.043 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.095 U	0.097 U	0.094 U	0.094 U	0.092 U	0.092 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U	0.017 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0092 U	0.0092 U	0.0094 U	0.0091 U	0.0091 U	0.0088 U	0.0089 U	0.0099 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.014 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.015 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.19 U
Acenaphthene	360	4500	0.55	mg/kg	0.12 J	0.22 J	0.012 J	0.0085 U	0.15 J	0.011 J	0.0084 J	0.048 J
Acenaphthylene	--	--	--	mg/kg	0.0092 U	0.0092 U	0.0094 U	0.0091 U	0.0091 U	0.0088 U	0.0089 U	0.0099 U
Acetophenone	780	12000	0.058	mg/kg	0.0078 U	0.0078 U	0.0079 U	0.0077 U	0.0077 U	0.0075 U	0.0075 U	0.0084 U
Anthracene	1800	23000	5.8	mg/kg	0.28 J	0.48 J	0.035 U	0.033 U	0.42	0.033 U	0.033 U	0.094 J
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.028 U	0.027 U	0.027 U	0.026 U	0.026 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**1.5 J**	**2.5 J**	**0.19**	0.029 U	**3.8**	**0.28**	**0.23**	**0.45**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**2 J**	**2.9**	**0.24**	**0.021 J**	**4.5**	**0.34**	**0.28**	**0.58**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**2.4 J**	**3.7**	**0.32**	0.034 J	**5.7**	**0.44**	**0.37**	**1.1**
Benzo[g,h,i]perylene	--	--	--	mg/kg	2.3 J	2.9 J+	0.27 J+	0.022 J+	3.6	0.25 J	0.21 J	0.53
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	1.1 J	1.4	0.12	0.015 U	**2.1**	0.16	0.11	0.45
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0084 U	0.0086 U	0.0083 U	0.0083 U	0.0081 U	0.0081 U	0.0091 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.17 J	0.064 J	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.031 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.019 J	0.011 UJ	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.026 U	0.026 U	0.025 U	0.025 U	0.025 U	0.025 U	0.028 U
Carbazole	--	--	--	mg/kg	0.26 J	0.4	0.027 J	0.0087 U	0.4	0.028 J	0.019 J	0.11 J
Chrysene	**16**	290	1.2	mg/kg	2.1 J	3	0.26 J	0.025 J	4.2	0.32 J	0.25 J	0.84
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.59 J**	**0.8 J+**	**0.061 J+**	0.018 U	**0.97**	**0.067**	**0.055**	**0.1**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.048 J	0.097 J	0.011 U	0.011 U	0.022 J	0.01 U	0.01 U	0.023 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.0098 U	0.011 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-059	CFSB-059	CFSB-059	CFSB-059	CFSB-060	CFSB-060	CFSB-060	CFSB-062
				Sample Date:	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/27/2016	5/27/2016	5/27/2016	6/2/2016
				Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-DUP8-SO	CFSB-059-SO-0-0.5	CFSB-059-SO-0.5-2	CFSB-059-SO-10-12	CFSB-060-SO-0-0.5	CFSB-060-SO-0.5-2	CFSB-060-SO-10-12	CFSB-062-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.02 U
Fluoranthene	**240**	3000	8.9	mg/kg	2.5 J	3.7	0.32 J	0.027 J	5.3	0.37	0.27 J	1
Fluorene	240	3000	0.54	mg/kg	0.084 J	0.15 J	0.0092 J	0.0077 U	0.053 J	0.0075 U	0.0075 U	0.044 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.014 U	0.015 U	0.014 U	0.014 UJ	0.014 U	0.014 U	0.016 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.01 U	0.01 U	0.0099 U	0.0099 U	0.0097 U	0.0097 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 UJ	0.022 UJ	0.023 UJ	0.022 UJ	0.022 UJ	0.021 U	0.021 U	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**2.3 J**	**2.9**	**0.26**	0.023 J	**3.7**	**0.26**	**0.22**	**0.57**
Isophorone	570	2400	0.026	mg/kg	0.0077 U	0.0077 U	0.0078 U	0.0076 U	0.0076 U	0.0074 U	0.0074 U	0.0083 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.064 J	0.095 J	0.0092 U	0.009 U	0.025 J	0.0087 U	0.0088 U	0.017 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.032 U	0.033 U	0.032 U	0.032 U	0.031 U	0.031 U	0.035 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.46 J	0.53	0.044 U	0.043 U	0.043 U	0.042 U	0.042 U	0.047 U
Phenanthrene	--	--	--	mg/kg	1.2 J	2.1 J	0.15 J	0.012 J	1.6	0.12 J	0.091 J	0.49
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U
Pyrene	**180**	2300	1.3	mg/kg	2.4 J	3.8	0.3 J	0.029 J	6.1	0.51 J+	0.36 J+	0.92

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-062	CFSB-062	CFSB-064	CFSB-064	CFSB-064	CFSB-065	CFSB-065	CFSB-065
				Sample Date:	6/2/2016	6/2/2016	6/3/2016	6/3/2016	6/3/2016	6/2/2016	6/2/2016	6/2/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-062-SO-0.5-2	CFSB-062-SO-10-12	CFSB-064-SO-0-0.5	CFSB-064-SO-0.5-2	CFSB-064-SO-10-12	CFSB-065-SO-0-0.5	CFSB-065-SO-0.5-2	CFSB-065-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.03 U	0.032 U	0.035 U	0.03 U	0.033 U	0.18 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.026 U	0.028 U	0.03 U	0.026 U	0.029 U	0.15 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.094 U	0.1 U	0.11 U	0.094 U	0.1 U	0.56 U	0.094 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.016 U	0.017 U	0.014 U	0.016 U	0.086 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.033 U	0.036 U	0.038 U	0.033 U	0.037 U	0.2 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.035 U	0.038 U	0.04 U	0.035 U	0.039 U	0.21 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.01 U	0.011 U	0.012 U	0.01 U	0.011 U	0.059 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0088 U	0.0083 U	0.0089 U	0.0096 U	0.0083 U	0.0092 U	0.049 U	0.0083 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.082 U	0.078 U	0.083 U	0.089 U	0.077 U	0.086 U	0.46 U	0.077 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.27 U	0.29 U	0.31 U	0.27 U	0.3 U	1.6 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.014 U	0.015 U	0.016 U	0.014 U	0.015 U	0.082 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.019 U	0.02 U	0.022 U	0.019 U	0.021 U	0.11 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0085 U	0.008 U	0.0086 U	0.0092 U	0.008 U	0.0089 U	0.047 U	0.008 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0095 U	0.009 U	0.0096 U	0.01 U	0.009 U	0.0099 U	0.053 U	0.0089 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0086 J	0.0078 U	0.025 J	0.018 J	0.0078 U	0.0086 U	0.046 U	0.0078 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.015 U	0.016 U	0.018 U	0.015 U	0.017 U	0.091 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.013 U	0.069 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.012 U	0.013 U	0.014 U	0.012 U	0.013 U	0.07 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0099 U	0.0094 U	0.01 U	0.011 U	0.0094 U	0.01 U	0.055 U	0.0094 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.039 U	0.042 U	0.045 U	0.039 U	0.044 U	0.23 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.012 U	0.01 U	0.012 U	0.062 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.094 U	0.1 U	0.11 U	0.094 U	0.1 U	0.55 U	0.094 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.065 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.015 U	0.016 U	0.017 U	0.015 U	0.017 U	0.089 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0096 U	0.0091 U	0.0097 U	0.01 U	0.0091 U	0.01 U	0.053 U	0.009 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.062 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.013 U	0.014 U	0.015 U	0.013 U	0.015 U	0.079 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 U	0.18 U	0.2 U	0.17 U	0.19 U	1 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.041 J	0.0085 U	0.049 J	0.061 J	0.0085 U	0.04 J	0.23 J	0.0085 U
Acenaphthylene	--	--	--	mg/kg	0.0096 U	0.0091 U	0.0097 U	0.01 U	0.0091 U	0.01 U	0.053 U	0.009 U
Acetophenone	780	12000	0.058	mg/kg	0.0081 U	0.0077 U	0.0082 U	0.0088 U	0.0077 U	0.0085 U	0.045 U	0.0077 U
Anthracene	1800	23000	5.8	mg/kg	0.047 J	0.033 U	0.089 J	0.1 J	0.033 U	0.085 J	0.51 J	0.033 U
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.016 U	0.017 U	0.018 U	0.016 U	0.017 U	0.092 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.027 U	0.031 J	0.031 U	0.027 U	0.03 U	0.16 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.21**	0.029 U	**0.43**	**0.34**	0.029 U	**0.68**	**4.1**	0.029 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.22**	0.011 U	**0.54**	**0.36**	0.011 U	**0.91**	**5.4**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.54**	0.014 U	**0.87**	**0.58**	0.014 U	**1.8**	**12**	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.25 J	0.02 U	0.55	0.26 J	0.02 U	1.4	9.7 J+	0.02 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.18	0.015 U	0.3	0.24	0.015 U	0.65	**3.8**	0.015 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.065 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0088 U	0.0083 U	0.0089 U	0.0096 U	0.0083 U	0.0092 U	0.049 U	0.0083 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.014 U	0.015 U	0.31 J+	0.014 U	0.015 U	0.52 J	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.011 U	0.012 U	0.017 J	0.011 U	0.012 U	0.064 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.025 U	0.027 U	0.029 U	0.025 U	0.028 U	0.15 U	0.025 U
Carbazole	--	--	--	mg/kg	0.049 J	0.0087 U	0.088 J	0.035 J	0.0087 U	0.16 J	1.1 J	0.0087 U
Chrysene	**16**	290	1.2	mg/kg	0.39	0.0096 U	0.61	0.41	0.0096 U	1.3	10	0.0096 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.046**	0.018 U	**0.12**	**0.077**	0.018 U	**0.25**	**1.6 J+**	0.018 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.017 J	0.011 U	0.022 J	0.041 J	0.011 U	0.019 J	0.094 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.01 U	0.011 U	0.012 U	0.01 U	0.011 U	0.059 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-062	CFSB-062	CFSB-064	CFSB-064	CFSB-064	CFSB-065	CFSB-065	CFSB-065
					Sample Date:	6/2/2016	6/2/2016	6/3/2016	6/3/2016	6/3/2016	6/2/2016	6/2/2016	6/2/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-062-SO-0.5-2	CFSB-062-SO-10-12	CFSB-064-SO-0-0.5	CFSB-064-SO-0.5-2	CFSB-064-SO-10-12	CFSB-065-SO-0-0.5	CFSB-065-SO-0.5-2	CFSB-065-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.01 U	0.011 U	0.012 U	0.01 U	0.011 U	0.06 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.062 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.018 U	0.019 U	0.021 U	0.018 U	0.02 U	0.11 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.5	0.01 U	0.89	0.76	0.01 U	1.4	9.2	0.01 U
Fluorene	240	3000	0.54	mg/kg		0.034 J	0.0077 U	0.044 J	0.051 J	0.0077 U	0.029 J	0.17 J	0.0077 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.014 U	0.015 U	0.016 U	0.014 U	0.016 U	0.084 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.011 U	0.0099 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.058 U	0.0099 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 U	0.022 U	0.024 U	0.025 U	0.022 U	0.024 U	0.13 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.014 U	0.013 U	0.014 U	0.015 U	0.013 U	0.014 U	0.076 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**0.22**	0.023 U	**0.6 J+**	**0.33**	0.023 U	**1.4**	**9.6 J+**	0.023 U
Isophorone	570	2400	0.026	mg/kg		0.008 U	0.0076 U	0.0081 U	0.0087 U	0.0076 U	0.0084 U	0.045 U	0.0076 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.022 J	0.009 U	0.024 J	0.02 J	0.009 U	0.014 J	0.09 J	0.0089 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.065 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.013 U	0.012 U	0.013 U	0.014 U	0.012 U	0.013 U	0.07 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.034 U	0.032 U	0.034 U	0.037 U	0.032 U	0.035 U	0.19 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.045 U	0.043 U	0.046 U	0.049 U	0.043 U	0.047 U	0.25 U	0.043 U
Phenanthrene	--	--	--	mg/kg		0.27 J	0.0094 U	0.51	0.36 J	0.0094 U	0.52	3.2	0.0094 U
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.013 U	0.068 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		0.45	0.016 U	0.81	0.69	0.016 U	1.3	9.8	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-066	CFSB-066	CFSB-066	CFSB-068	CFSB-068	CFSB-069	CFSB-069	CFSB-069
				Sample Date:	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-066-SO-0-0.5	CFSB-066-SO-0.5-2	CFSB-066-SO-10-12	CFSB-068-SO-0.5-2	CFSB-068-SO-10-12	CFSB-069-SO-0-0.5	CFSB-069-SO-0.5-2	CFSB-069-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.15 U	0.03 U	0.029 U	0.03 U	0.029 U	0.03 U	0.03 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.13 U	0.026 U	0.026 U	0.026 U	0.025 U	0.027 U	0.026 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.47 U	0.093 U	0.092 U	0.093 U	0.091 U	0.095 U	0.093 U	0.095 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.073 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.17 U	0.033 U	0.032 U	0.033 U	0.032 U	0.034 U	0.033 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.18 U	0.034 U	0.034 U	0.035 U	0.034 U	0.036 U	0.035 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.05 U	0.0098 U	0.0098 U	0.0099 U	0.0097 U	0.01 U	0.0099 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.042 U	0.0082 U	0.0081 U	0.0082 U	0.0081 U	0.0084 U	0.0082 U	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.39 U	0.076 U	0.075 U	0.077 U	0.075 U	0.078 U	0.076 U	0.078 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	1.3 U	0.26 U	0.26 U	0.26 U	0.26 U	0.27 U	0.26 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.07 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.094 U	0.018 U	0.018 U	0.019 U	0.018 U	0.019 U	0.018 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.04 U	0.0079 U	0.0078 U	0.0079 U	0.0078 U	0.0081 U	0.0079 U	0.008 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.045 U	0.0088 U	0.0087 U	0.0089 U	0.0087 U	0.0091 U	0.0088 U	0.009 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.078 J	0.022 J	0.0076 U	0.0077 U	0.0075 U	0.0085 J	0.0077 U	0.0078 U
2-Methylphenol	320	4100	0.075	mg/kg	0.077 U	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.058 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.059 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.047 U	0.0092 U	0.0091 U	0.0093 U	0.0091 U	0.0095 U	0.0092 U	0.0094 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.2 U	0.039 U	0.038 U	0.039 U	0.038 U	0.04 U	0.039 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.052 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.47 U	0.092 U	0.091 U	0.093 U	0.091 U	0.095 U	0.093 U	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.056 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.076 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.046 U	0.0089 U	0.0088 U	0.009 U	0.0088 U	0.0092 U	0.0089 U	0.0091 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.053 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.067 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.85 U	0.17 U	0.16 U	0.17 U	0.16 U	0.17 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.41 J	0.11 J	0.0083 U	0.03 J	0.029 J	0.061 J	0.02 J	0.0086 U
Acenaphthylene	--	--	--	mg/kg	0.046 U	0.0089 U	0.0088 U	0.009 U	0.0088 U	0.01 J	0.0089 U	0.0091 U
Acetophenone	780	12000	0.058	mg/kg	0.046 J	0.017 J	0.0075 U	0.0076 U	0.0074 U	0.0078 U	0.0076 U	0.0077 U
Anthracene	1800	23000	5.8	mg/kg	0.93 J	0.28 J	0.033 U	0.063 J	0.07 J	0.12 J	0.051 J	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.079 U	0.015 U	0.015 U	0.016 U	0.015 U	0.016 U	0.015 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.13 U	0.026 U	0.026 U	0.027 U	0.026 U	0.027 U	0.026 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**8**	**2.2**	**0.2**	**0.48**	**0.26**	**0.64**	**0.27**	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**9**	**2.2**	**0.17**	**0.61**	**0.28**	**0.81**	**0.33**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**15**	**3.4**	**0.29**	**0.82**	**0.35**	**1.1**	**0.48**	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	6.8	1.9	0.17 J	0.43	0.26 J	0.71	0.4	0.02 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**5.2**	1.4	0.12	0.3	0.15	0.39	0.14	0.015 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.055 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.042 U	0.0082 U	0.0081 U	0.0082 U	0.0081 U	0.0084 U	0.0082 U	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.069 U	0.044 J	0.013 U	0.054 J	0.013 U	0.028 J	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.055 U	0.011 U	0.011 U	0.011 U	0.022 J+	0.011 U	0.013 J+	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.13 U	0.025 U	0.025 U	0.025 U	0.025 U	0.026 U	0.025 U	0.026 U
Carbazole	--	--	--	mg/kg	1.7 J	0.45	0.035 J	0.081 J	0.089 J	0.13 J	0.05 J	0.0088 U
Chrysene	**16**	290	1.2	mg/kg	13	3.6	0.33 J	0.66	0.37	0.83	0.35	0.0097 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**1.9**	**0.53**	**0.049**	**0.12**	**0.062**	**0.16**	**0.094**	0.018 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.12 J	0.031 J	0.01 U	0.011 U	0.015 J	0.023 J	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.05 U	0.0098 U	0.0098 U	0.0099 U	0.0097 U	0.01 U	0.0099 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-066	CFSB-066	CFSB-068	CFSB-068	CFSB-069	CFSB-069	CFSB-069
					Sample Date:	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-066-SO-0-0.5	CFSB-066-SO-0.5-2	CFSB-066-SO-10-12	CFSB-068-SO-0.5-2	CFSB-068-SO-10-12	CFSB-069-SO-0-0.5	CFSB-069-SO-0.5-2	CFSB-069-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.051 U	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.053 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.09 U	0.018 U	0.017 U	0.018 U	0.017 U	0.018 U	0.018 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		15	3.7	0.34	0.82	0.71	1.1	0.41	0.012 J
Fluorene	240	3000	0.54	mg/kg		0.24 J	0.06 J	0.0075 U	0.019 J	0.023 J	0.038 J	0.015 J	0.0077 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.072 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.05 U	0.0097 U	0.0096 U	0.0098 U	0.0096 U	0.01 U	0.0098 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.11 UJ	0.022 U	0.021 U	0.022 U	0.021 U	0.022 U	0.022 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.065 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**6.8**	**1.9**	**0.17**	**0.47**	**0.25**	**0.69**	**0.35**	0.024 U
Isophorone	570	2400	0.026	mg/kg		0.059 J	0.0099 J	0.0074 U	0.0075 U	0.0073 U	0.0077 U	0.0075 U	0.0076 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.11 J	0.033 J	0.0087 U	0.0089 U	0.011 J	0.022 J	0.0088 U	0.009 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.056 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.059 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.16 U	0.031 U	0.031 U	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.21 U	0.042 U	0.041 U	0.042 U	0.041 U	0.043 U	0.28	0.043 U
Phenanthrene	--	--	--	mg/kg		5.8	1.7	0.12 J	0.39	0.36	0.58	0.26 J	0.01 J
Phenol	1900	25000	0.33	mg/kg		0.058 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		16	4.9 J+	0.35 J+	0.76	0.59 J+	0.91	0.44 J+	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-071	CFSB-071	CFSB-071	CFSB-071	CFSB-073	CFSB-073	CFSB-073	CFSB-074
				Sample Date:	5/27/2016	5/27/2016	5/27/2016	5/27/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-071-SO-0-0.5	CFSB-071-SO-0.5-2	CFSB-071-SO-10-12	CFSB-DUP7-SO	CFSB-073-SO-0-0.5	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12	CFSB-074-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.032 U	0.03 U	0.03 U	0.031 U	0.029 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.026 U	0.028 U	0.026 U	0.026 U	0.027 U	0.026 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.096 U	0.094 U	0.1 U	0.093 U	0.094 U	0.098 U	0.092 U	0.093 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.033 U	0.035 U	0.033 U	0.033 U	0.034 U	0.032 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.035 U	0.037 U	0.035 U	0.035 U	0.036 U	0.034 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0098 U	0.0099 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0083 U	0.0088 U	0.0082 U	0.0083 U	0.0086 U	0.0081 U	0.0082 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.079 U	0.077 U	0.082 U	0.076 U	0.077 U	0.08 U	0.076 U	0.077 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.26 U	0.28 U	0.26 U	0.26 U	0.28 U	0.26 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.0079 U	0.0085 U	0.0079 U	0.0079 U	0.0083 U	0.0078 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0091 U	0.0089 U	0.0095 U	0.0088 U	0.0089 U	0.0093 U	0.0087 U	0.0089 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.011 J	0.0077 U	0.0083 U	0.0077 U	0.0077 U	0.0081 U	0.0076 U	0.0099 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.015 U	0.016 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.0093 U	0.01 U	0.0093 U	0.0093 U	0.0097 U	0.0091 U	0.0093 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.039 U	0.042 U	0.039 U	0.039 U	0.041 U	0.038 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.093 U	0.1 U	0.093 U	0.093 U	0.097 U	0.092 U	0.093 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0092 U	0.009 U	0.0096 U	0.0089 U	0.009 U	0.0094 U	0.0088 U	0.009 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.013 U	0.014 U	0.013 U	0.013 U	0.014 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.18 U	0.17 U	0.17 U	0.18 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.037 J	0.019 J	0.0091 U	0.0084 U	0.015 J	0.0088 U	0.0083 U	0.072 J
Acenaphthylene	--	--	--	mg/kg	0.0092 U	0.009 U	0.0096 U	0.0089 U	0.009 U	0.0094 U	0.0088 U	0.009 U
Acetophenone	780	12000	0.058	mg/kg	0.0078 U	0.0076 U	0.0082 U	0.0076 U	0.0076 U	0.0079 U	0.0075 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg	0.077 J	0.033 J	0.036 U	0.033 U	0.04 J	0.035 U	0.033 U	0.19 J
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.017 U	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	0.028 U	0.026 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.51**	**0.26**	0.031 U	0.029 U	**0.37**	0.03 U	0.068	**1.6**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.59**	**0.34**	0.011 U	0.011 U	**0.52**	0.011 U	**0.08**	**2.1**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.84**	**0.46**	0.015 U	0.014 U	**1**	0.014 U	0.15	**3.4**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.67	0.34 J	0.022 U	0.02 U	0.77	0.021 U	0.097 J	2.5
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.37	0.19	0.016 U	0.015 U	0.33	0.016 U	0.06	1.2
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0083 U	0.0088 U	0.0082 U	0.0083 U	0.0086 U	0.0081 U	0.0082 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.038 J	0.024 J	0.015 U	0.014 U	0.014 U	0.014 U	0.013 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.3 J+	0.068 J+	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.025 U	0.027 U	0.025 U	0.025 U	0.026 U	0.025 U	0.025 U
Carbazole	--	--	--	mg/kg	0.088 J	0.044 J	0.0093 U	0.0086 U	0.088 J	0.009 U	0.013 J	0.28 J
Chrysene	**16**	290	1.2	mg/kg	0.68	0.38	0.01 U	0.0095 U	0.61	0.0099 U	0.11 J	2.3
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.16**	**0.078**	0.019 U	0.018 U	**0.14**	0.019 U	0.018 U	**0.5**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.013 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.025 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0098 U	0.0099 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-071	CFSB-071	CFSB-071	CFSB-071	CFSB-073	CFSB-073	CFSB-073	CFSB-074
				Sample Date:	5/27/2016	5/27/2016	5/27/2016	5/27/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-071-SO-0-0.5	CFSB-071-SO-0.5-2	CFSB-071-SO-10-12	CFSB-DUP7-SO	CFSB-073-SO-0-0.5	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12	CFSB-074-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U	0.019 U	0.017 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.74	0.37	0.011 U	0.01 U	0.63	0.011 U	0.1 J	2.7
Fluorene	240	3000	0.54	mg/kg	0.023 J	0.01 J	0.0082 U	0.0076 U	0.0076 U	0.0079 U	0.0075 U	0.046 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.0098 U	0.011 U	0.0098 U	0.0098 U	0.01 U	0.0097 U	0.0098 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.022 U	0.023 U	0.022 U	0.022 U	0.023 U	0.021 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**0.59**	**0.32**	0.025 U	0.023 U	**0.53**	0.024 U	0.072	**1.9**
Isophorone	570	2400	0.026	mg/kg	0.0077 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0078 U	0.0074 U	0.0075 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.017 J	0.0098 J	0.0095 U	0.0088 U	0.0089 U	0.0093 U	0.0087 U	0.022 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.032 U	0.034 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.043 U	0.042 U	0.045 U	0.042 U	0.042 U	0.044 U	0.042 U	0.042 U
Phenanthrene	--	--	--	mg/kg	0.41	0.18 J	0.01 U	0.0093 U	0.24 J	0.0097 U	0.042 J	1
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg	1 J+	0.48 J+	0.017 U	0.016 U	0.66	0.017 U	0.11 J	2.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-074	CFSB-074	CFSB-075	CFSB-075	CFSB-075	CFSB-079	CFSB-079	CFSB-079
			Sample Date:		6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-074-SO-0.5-2	CFSB-074-SO-10-12	CFSB-075-SO-0-0.5	CFSB-075-SO-0.5-2	CFSB-075-SO-10-12	CFSB-079-SO-0-0.5	CFSB-079-SO-0.5-2	CFSB-079-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.029 U	0.029 U	0.031 U	0.031 U	0.031 U	0.031 U	0.03 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.025 U	0.025 U	0.027 U	0.027 U	0.027 U	0.027 U	0.026 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.092 U	0.092 U	0.097 U	0.096 U	0.096 U	0.098 U	0.095 U	0.093 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.032 U	0.032 U	0.034 U	0.034 U	0.034 U	0.034 U	0.033 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.034 U	0.034 U	0.036 U	0.036 U	0.036 U	0.036 U	0.035 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0097 U	0.0097 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0099 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0081 U	0.0081 U	0.0086 U	0.0085 U	0.0084 U	0.0087 U	0.0084 U	0.0082 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.075 U	0.075 U	0.08 U	0.079 U	0.079 U	0.081 U	0.078 U	0.077 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.26 U	0.27 U	0.27 U	0.27 U	0.28 U	0.27 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.018 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0078 U	0.0078 U	0.0082 U	0.0081 U	0.0081 U	0.0083 U	0.008 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0087 U	0.0087 U	0.0092 U	0.0091 U	0.0091 U	0.0093 U	0.009 U	0.0089 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0076 U	0.0076 U	0.008 U	0.0079 U	0.0079 U	0.0081 U	0.0078 U	0.0077 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.016 U	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0091 U	0.0091 U	0.0097 U	0.0095 U	0.0095 U	0.0098 U	0.0094 U	0.0093 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.038 U	0.038 U	0.041 U	0.04 U	0.04 U	0.041 U	0.04 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.091 U	0.091 U	0.097 U	0.096 U	0.096 U	0.098 U	0.094 U	0.093 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0088 U	0.0088 U	0.0093 U	0.0092 U	0.0092 U	0.0094 U	0.0091 U	0.009 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.16 U	0.16 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0083 U	0.0091 J	0.035 J	0.019 J	0.0087 U	0.015 J	0.0086 U	0.0084 U
Acenaphthylene	--	--	--	mg/kg	0.0088 U	0.0088 U	0.0093 U	0.0092 U	0.0092 U	0.0094 U	0.0091 U	0.009 U
Acetophenone	780	12000	0.058	mg/kg	0.0075 U	0.0075 U	0.0079 U	0.0078 U	0.0078 U	0.008 U	0.0077 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.033 U	0.1 J	0.044 J	0.034 U	0.038 J	0.034 U	0.033 U
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.015 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 U	0.026 U	0.028 U	0.027 U	0.027 U	0.028 U	0.027 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.03 J	**0.22**	**0.43**	**0.37**	0.12	**0.26**	0.03 U	0.029 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.021 J**	**0.31**	**0.51**	**0.48**	**0.18**	**0.37**	0.011 U	**0.035**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.038	**0.49**	**0.87**	**0.81**	**0.3**	**0.73**	0.014 U	0.067
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.34	0.54	0.48	0.19 J	2.5	0.02 U	0.18 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.19	0.33	0.33	0.11	0.3	0.015 U	0.038
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0081 U	0.0081 U	0.0086 U	0.0085 U	0.0084 U	0.0087 U	0.0084 U	0.0082 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.052 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.025 U	0.026 U	0.026 U	0.026 U	0.026 U	0.025 U	0.025 U
Carbazole	--	--	--	mg/kg	0.0085 U	0.043 J	0.096 J	0.071 J	0.027 J	0.096 J	0.0088 U	0.012 J
Chrysene	**16**	290	1.2	mg/kg	0.025 J	0.32 J	0.62	0.56	0.21 J	0.42	0.0096 U	0.045 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	**0.063**	**0.13**	**0.074**	0.019 U	**0.28**	0.018 U	0.018 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.01 U	0.01 U	0.023 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0097 U	0.0097 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0099 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-074	CFSB-074	CFSB-075	CFSB-075	CFSB-075	CFSB-079	CFSB-079	CFSB-079
					Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-074-SO-0.5-2	CFSB-074-SO-10-12	CFSB-075-SO-0-0.5	CFSB-075-SO-0.5-2	CFSB-075-SO-10-12	CFSB-079-SO-0-0.5	CFSB-079-SO-0.5-2	CFSB-079-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.0099 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.017 U	0.017 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.038 J	0.38	0.9	0.62	0.21 J	0.46	0.01 U	0.044 J
Fluorene	240	3000	0.54	mg/kg		0.0075 U	0.0075 U	0.035 J	0.0078 U	0.0078 U	0.0085 J	0.0077 U	0.0076 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.015 U	0.015 U	0.015 U	0.015 U	0.014 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0096 U	0.0096 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0098 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.021 U	0.021 U	0.023 U	0.022 U	0.022 U	0.023 U	0.022 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.023 U	**0.25**	**0.45**	**0.4**	0.15	**1.3**	0.024 U	0.093
Isophorone	570	2400	0.026	mg/kg		0.0073 U	0.0074 U	0.0078 U	0.0077 U	0.0077 U	0.0079 U	0.0076 U	0.0075 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0087 U	0.0087 U	0.0092 U	0.0091 U	0.0091 U	0.0093 U	0.009 U	0.0089 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.031 U	0.031 U	0.033 U	0.033 U	0.032 U	0.033 U	0.032 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.041 U	0.041 U	0.044 U	0.043 U	0.043 U	0.044 U	0.043 U	0.042 U
Phenanthrene	--	--	--	mg/kg		0.025 J	0.15 J	0.46	0.26 J	0.088 J	0.16 J	0.0094 U	0.018 J
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		0.036 J	0.39	0.85	0.64	0.21 J	0.45	0.016 U	0.047 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-080	CFSB-080	CFSB-080	CFSB-082	CFSB-082	CFSB-082	CFSB-084	CFSB-084
				Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	5/27/2016	5/27/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-080-SO-0-0.5	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12	CFSB-082-SO-0-0.5	CFSB-082-SO-0.5-2	CFSB-082-SO-10-12	CFSB-084-SO-0-0.5	CFSB-084-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.032 U	0.03 U	0.03 U	0.031 U	0.031 U	0.03 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.028 U	0.026 U	0.026 U	0.027 U	0.027 U	0.026 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.096 U	0.099 U	0.093 U	0.094 U	0.098 U	0.098 U	0.095 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U	0.015 U	0.015 U	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.035 U	0.033 U	0.033 U	0.035 U	0.035 U	0.033 UJ	0.036 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.037 U	0.035 U	0.035 U	0.037 U	0.037 U	0.035 U	0.038 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0088 U	0.0082 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.079 U	0.082 U	0.076 U	0.077 U	0.081 U	0.081 U	0.078 U	0.084 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.28 U	0.26 U	0.27 U	0.28 U	0.28 U	0.27 UJ	0.29 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.0084 U	0.0079 U	0.008 U	0.0084 U	0.0084 U	0.008 U	0.0086 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0091 U	0.0094 U	0.0088 U	0.0089 U	0.0094 U	0.0094 U	0.009 U	0.0097 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0079 U	0.0082 U	0.1 J	0.0077 U	0.0081 U	0.0081 U	0.0078 U	0.0084 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.0099 U	0.0093 U	0.0093 U	0.0098 U	0.0098 U	0.0094 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.041 U	0.039 U	0.039 U	0.041 U	0.041 U	0.039 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.099 U	0.093 U	0.094 U	0.098 U	0.098 U	0.094 UJ	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.016 U	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0092 U	0.0095 U	0.0089 U	0.009 U	0.0095 U	0.0095 U	0.0091 U	0.0098 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.18 U	0.17 U	0.17 U	0.18 U	0.18 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0087 U	0.009 U	0.016 J	0.014 J	0.0089 U	0.0089 U	0.03 J	0.0092 U
Acenaphthylene	--	--	--	mg/kg	0.0092 U	0.0095 U	0.0089 U	0.009 U	0.0095 U	0.0095 U	0.0091 U	0.0098 U
Acetophenone	780	12000	0.058	mg/kg	0.0078 U	0.0081 U	0.0076 U	0.0076 U	0.008 U	0.008 U	0.0077 U	0.0083 U
Anthracene	1800	23000	5.8	mg/kg	0.034 U	0.035 U	0.033 U	0.045 J	0.035 U	0.035 U	0.06 J	0.036 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.028 U	0.026 U	0.027 U	0.028 U	0.028 U	0.027 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.13	0.031 U	0.059	**0.3**	0.031 U	0.031 U	**0.48**	0.063
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.17**	0.011 U	**0.074**	**0.38**	0.011 U	0.011 U	**0.68**	**0.072**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.39**	0.014 U	0.13	**0.9**	0.017 J	0.014 U	**1.3**	0.15
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.47	0.021 U	0.15 J	0.83	0.021 U	0.021 U	0.95	0.13 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.14	0.016 U	0.058	0.33	0.016 U	0.016 U	0.52	0.063
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0088 U	0.0082 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.011 U	0.031 J	0.011 U	0.011 U	0.036 J	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.027 U	0.025 U	0.025 U	0.027 U	0.026 U	0.025 U	0.027 U
Carbazole	--	--	--	mg/kg	0.05 J	0.0092 U	0.015 J	0.085 J	0.0091 U	0.0091 U	0.099 J	0.014 J
Chrysene	**16**	290	1.2	mg/kg	0.22 J	0.01 U	0.08 J	0.5	0.014 J	0.01 U	0.81	0.096 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.065**	0.019 U	**0.02 J**	**0.1**	0.019 U	0.019 U	**0.16**	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.011 U	0.021 J	0.011 U	0.011 U	0.011 U	0.012 J	0.012 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-080	CFSB-080	CFSB-082	CFSB-082	CFSB-082	CFSB-084	CFSB-084
					Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	5/27/2016	5/27/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFSB-080-SO-0-0.5	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12	CFSB-082-SO-0-0.5	CFSB-082-SO-0.5-2	CFSB-082-SO-10-12	CFSB-084-SO-0-0.5	CFSB-084-SO-0.5-2
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.081 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.019 U	0.018 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.22 J	0.011 U	0.087 J	0.49	0.016 J	0.014 J	0.92	0.083 J
Fluorene	240	3000	0.54	mg/kg		0.0078 U	0.0081 U	0.013 J	0.011 J	0.008 U	0.008 U	0.02 J	0.0083 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.015 U	0.014 U	0.014 U	0.091	0.015 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.01 U	0.0098 U	0.0099 U	0.01 U	0.01 U	0.0099 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.023 U	0.022 U	0.022 U	0.023 U	0.023 U	0.022 UJ	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**0.23**	0.025 U	0.081	**0.48**	0.025 U	0.024 U	**0.84**	0.094
Isophorone	570	2400	0.026	mg/kg		0.0077 U	0.008 U	0.0075 U	0.0075 U	0.0079 U	0.0079 U	0.0076 U	0.0082 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0091 U	0.0094 U	0.67	0.0089 U	0.0094 U	0.0094 U	0.011 J	0.0097 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.034 U	0.032 U	0.032 U	0.033 U	0.033 U	0.032 U	0.035 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.045 U	0.042 U	0.042 U	0.045 U	0.045 U	0.043 UJ	0.046 U
Phenanthrene	--	--	--	mg/kg		0.082 J	0.0099 U	0.045 J	0.19 J	0.012 J	0.0098 U	0.34 J	0.038 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.23 J	0.017 U	0.093 J	0.56	0.018 J	0.017 U	0.92	0.11 J+

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-084	CFSB-086	CFSB-086	CFSB-086	CFSB-087	CFSB-087	CFSB-087	CFSB-088
				Sample Date:	5/27/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-084-SO-10-12	CFSB-086-SO-0-0.5	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0-0.5	CFSB-087-SO-0.5-2	CFSB-087-SO-10-12	CFSB-088-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.031 U	0.03 U	0.031 U	0.031 U	0.03 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.026 U	0.027 U	0.026 U	0.027 U	0.027 U	0.026 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.094 U	0.094 U	0.096 U	0.093 U	0.097 U	0.096 U	0.093 U	0.096 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.014 U	0.015 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.033 U	0.034 U	0.033 U	0.034 U	0.034 U	0.033 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.035 U	0.036 U	0.035 U	0.036 U	0.036 U	0.035 U	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0083 U	0.0083 U	0.0085 U	0.0082 U	0.0086 U	0.0085 U	0.0082 U	0.0085 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.077 U	0.079 U	0.076 U	0.08 U	0.079 U	0.077 U	0.079 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.26 U	0.27 U	0.26 U	0.28 U	0.27 U	0.26 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.0079 U	0.0081 U	0.0079 U	0.0083 U	0.0082 U	0.0079 U	0.0082 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.0089 U	0.0091 U	0.0088 U	0.0093 U	0.0091 U	0.0089 U	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.0077 U	0.0079 U	0.0077 U	0.008 U	0.0079 U	0.0077 U	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.016 U	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0093 U	0.0093 U	0.0096 U	0.0092 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.039 U	0.04 U	0.039 U	0.041 U	0.04 U	0.039 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.093 U	0.096 U	0.093 U	0.097 U	0.096 U	0.093 U	0.096 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.009 U	0.0092 U	0.0089 U	0.0094 U	0.0093 U	0.009 U	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0085 U	0.04 J	0.0087 U	0.0084 U	0.028 J	0.024 J	0.015 J	0.021 J
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.009 U	0.0092 U	0.0089 U	0.0094 U	0.0093 U	0.009 U	0.0092 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0076 U	0.0078 U	0.0076 U	0.0079 U	0.0078 U	0.0076 U	0.0078 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.078 J	0.034 U	0.033 U	0.068 J	0.046 J	0.039 J	0.043 J
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.027 U	0.026 U	0.028 U	0.027 U	0.027 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.072	**0.4**	0.094	0.13	**0.44**	**0.23**	**0.22**	**0.3**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.088**	**0.49**	**0.12**	**0.16**	**0.61**	**0.35**	**0.31**	**0.42**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.16	**0.89**	**0.2**	**0.27**	**1.4**	**0.7**	**0.71**	**0.97**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.11 J	0.69	0.14 J	0.21 J	1.2	0.7	0.61	0.61
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.058	0.34	0.085	0.11	0.43	0.29	0.21	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0083 U	0.0083 U	0.0085 U	0.0082 U	0.0086 U	0.0085 U	0.0082 U	0.0085 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.022 J	0.014 U	0.019 J	0.023 J	0.019 J	0.036 J	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	1.4	0.46	0.043 J	0.016 J	0.015 J	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.025 U	0.026 U	0.025 U	0.026 U	0.026 U	0.025 U	0.026 U
Carbazole	--	--	--	mg/kg	0.014 J	0.13 J	0.028 J	0.038 J	0.2 J	0.099 J	0.09 J	0.089 J
Chrysene	**16**	290	1.2	mg/kg	0.099 J	0.64	0.15 J	0.2 J	0.85	0.48	0.44	0.55
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.027 J**	**0.15**	**0.039**	**0.048**	**0.24**	**0.16**	**0.12**	**0.12**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.013 J	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-084	CFSB-086	CFSB-086	CFSB-086	CFSB-087	CFSB-087	CFSB-087	CFSB-088
					Sample Date:	5/27/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-084-SO-10-12	CFSB-086-SO-0-0.5	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0-0.5	CFSB-087-SO-0.5-2	CFSB-087-SO-10-12	CFSB-088-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.097 J	0.76	0.19 J	0.23 J	0.76	0.43	0.37	0.52
Fluorene	240	3000	0.54	mg/kg		0.0076 U	0.029 J	0.0078 U	0.0076 U	0.02 J	0.019 J	0.011 J	0.017 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.015 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.0098 U	0.0099 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.022 U	0.022 U	0.023 U	0.022 U	0.022 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.097	**0.6**	0.12	**0.19**	**1.1**	**0.63**	**0.54**	**0.48**
Isophorone	570	2400	0.026	mg/kg		0.0075 U	0.0075 U	0.0077 U	0.0074 U	0.0078 U	0.0077 U	0.0075 U	0.0077 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0089 U	0.009 J	0.0091 U	0.0088 U	0.01 J	0.011 J	0.0089 U	0.0091 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.032 U	0.033 U	0.031 U	0.033 U	0.033 U	0.032 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.042 U	0.042 U	0.043 U	0.042 U	0.044 U	0.044 U	0.042 U	0.044 U
Phenanthrene	--	--	--	mg/kg		0.047 J	0.35	0.075 J	0.079 J	0.29 J	0.21 J	0.17 J	0.25 J
Phenol	1900	25000	0.33	mg/kg		0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.13 J+	0.6	0.15 J	0.17 J	0.61	0.4	0.36	0.67

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-088	CFSB-088	CFSB-092	CFSB-092	CFSB-092	CFSB-094	CFSB-094	CFSB-094
			Sample Date:		5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/24/2016	5/24/2016	5/24/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-088-SO-0.5-2	CFSB-088-SO-10-12	CFSB-092-SO-0-0.5	CFSB-092-SO-0.5-2	CFSB-092-SO-10-12	CFSB-094-SO-0-0.5	CFSB-094-SO-0.5-2.0	CFSB-094-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.029 U	0.03 U	0.031 U	0.029 U	0.03 U	0.029 U	0.029 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.026 U	0.027 U	0.027 U	0.026 U	0.027 U	0.026 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.095 U	0.092 U	0.095 U	0.097 U	0.092 U	0.095 U	0.092 U	0.092 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.032 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.032 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.034 U	0.036 U	0.036 U	0.034 U	0.036 U	0.034 U	0.034 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.01 U	0.0098 U	0.0097 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0081 U	0.0084 U	0.0085 U	0.0081 U	0.0084 U	0.0081 U	0.0081 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.078 U	0.076 U	0.079 U	0.079 U	0.076 U	0.078 U	0.076 U	0.075 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.26 U	0.27 U	0.27 U	0.26 U	0.27 U	0.26 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.008 U	0.0078 U	0.0081 U	0.0082 U	0.0078 U	0.0081 U	0.0078 U	0.0078 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.009 U	0.0087 U	0.0091 U	0.0092 U	0.0087 U	0.0091 U	0.0088 U	0.0087 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0078 U	0.0076 U	0.0079 U	0.008 U	0.0076 U	0.0079 U	0.0076 U	0.0088 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U	0.015 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0094 U	0.0091 U	0.0095 U	0.0096 U	0.0092 U	0.0095 U	0.0092 U	0.0091 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.038 U	0.04 U	0.04 U	0.038 U	0.04 U	0.039 U	0.038 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.092 U	0.095 U	0.096 U	0.092 U	0.095 U	0.092 U	0.091 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0091 U	0.0088 U	0.0092 U	0.0093 U	0.0088 U	0.0092 U	0.0089 U	0.0088 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg	0.032 J	0.0083 U	0.036 J	0.0099 J	0.0083 U	0.027 J	0.032 J	0.038 J
Acenaphthylene	--	--	--	mg/kg	0.0091 U	0.0088 U	0.0092 U	0.0093 U	0.0088 U	0.013 J	0.0089 U	0.0088 U
Acetophenone	780	12000	0.058	mg/kg	0.0077 U	0.0075 U	0.0078 U	0.0079 U	0.0075 U	0.0079 J	0.0075 U	0.0075 U
Anthracene	1800	23000	5.8	mg/kg	0.06 J	0.033 U	0.059 J	0.034 U	0.033 U	0.065 J	0.046 J	0.047 J
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U	0.015 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.026 U	0.027 U	0.028 U	0.026 U	0.027 U	0.026 U	0.026 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.45**	0.029 J	**0.23**	0.15	0.029 U	**0.21**	**0.17**	0.075
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.59**	**0.026 J**	**0.28**	**0.2**	0.01 U	**0.28**	**0.18**	**0.06**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**1.4**	0.072	**0.47**	**0.4**	0.013 U	**0.41**	**0.27**	0.1
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.79	0.031 J	0.31 J	0.28 J	0.02 U	0.92	0.27 J	0.11 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.015 U	0.2	0.13	0.015 U	0.18	0.11	0.042
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0081 U	0.0084 U	0.0085 U	0.0081 U	0.0084 U	0.0081 U	0.0081 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.12 J	0.064 J	0.061 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.015 J	0.011 U	0.011 U	0.011 U	0.011 U	0.05 J	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.025 U	0.026 U	0.026 U	0.025 U	0.026 U	0.025 U	0.025 U
Carbazole	--	--	--	mg/kg	0.12 J	0.0085 U	0.052 J	0.04 J	0.0085 U	0.057 J	0.038 J	0.025 J
Chrysene	**16**	290	1.2	mg/kg	0.84	0.042 J	0.3 J	0.23 J	0.0094 U	0.33 J	0.24 J	0.097 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.14**	0.018 U	**0.069**	**0.057**	0.018 U	**0.12 J+**	**0.054 J+**	**0.023 J+**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.012 J	0.01 U	0.017 J	0.011 U	0.01 U	0.011 U	0.011 J	0.015 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.01 U	0.0098 U	0.0097 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-088	CFSB-092	CFSB-092	CFSB-092	CFSB-094	CFSB-094	CFSB-094
					Sample Date:	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/24/2016	5/24/2016	5/24/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-088-SO-0.5-2	CFSB-088-SO-10-12	CFSB-092-SO-0-0.5	CFSB-092-SO-0.5-2	CFSB-092-SO-10-12	CFSB-094-SO-0-0.5	CFSB-094-SO-0.5-2.0	CFSB-094-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.01 U	0.011 U	0.011 U	0.01 U	0.085 J	0.02 J	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.017 U	0.018 U	0.018 U	0.017 U	0.018 U	0.018 U	0.017 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.78	0.044 J	0.4	0.25 J	0.01 U	0.42	0.35	0.18 J
Fluorene	240	3000	0.54	mg/kg		0.021 J	0.0075 U	0.028 J	0.0079 U	0.0075 U	0.02 J	0.021 J	0.03 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.0097 U	0.01 U	0.01 U	0.0097 U	0.01 U	0.0097 U	0.0096 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.021 U	0.022 U	0.023 U	0.021 U	0.022 UJ	0.022 UJ	0.021 UJ
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**0.64**	0.025 J	**0.26**	**0.22**	0.023 U	**0.56 J+**	**0.22 J+**	0.083 J+
Isophorone	570	2400	0.026	mg/kg		0.0076 U	0.0074 U	0.0077 U	0.0078 U	0.0074 U	0.0077 U	0.0074 U	0.0074 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.011 J	0.0087 U	0.022 J	0.0092 U	0.0087 U	0.0091 U	0.0088 U	0.025 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.032 U	0.031 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.031 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.042 U	0.043 U	0.044 U	0.042 U	0.043 U	0.042 U	0.041 U
Phenanthrene	--	--	--	mg/kg		0.34 J	0.025 J	0.26 J	0.11 J	0.0092 U	0.24 J	0.25 J	0.2 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		1	0.048 J	0.42	0.25 J	0.016 U	0.4	0.35	0.19 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MBCO Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-095	CFSB-095	CFSB-095	CFSB-097	CFSB-097	CFSB-097	CFSB-098	CFSB-098
			Sample Date:		5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-095-SO-0-0.5	CFSB-095-SO-0.5-2.0	CFSB-095-SO-10-12	CFSB-097-SO-0-0.5	CFSB-097-SO-0.5-2	CFSB-097-SO-10-12	CFSB-098-SO-0-0.5	CFSB-098-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.03 U	0.031 U	0.033 U	0.032 U	0.029 U	0.032 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.026 U	0.027 U	0.029 U	0.028 U	0.025 U	0.028 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.099 U	0.094 U	0.099 U	0.1 U	0.1 U	0.09 U	0.1 U	0.094 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.014 U	0.015 U	0.016 UJ	0.015 UJ	0.014 UJ	0.015 UJ	0.014 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.033 U	0.035 U	0.036 U	0.035 U	0.032 U	0.035 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.035 U	0.037 U	0.038 U	0.037 U	0.034 U	0.037 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0096 U	0.011 U	0.0099 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0088 U	0.0083 U	0.0087 U	0.0091 U	0.0088 U	0.008 U	0.0088 U	0.0083 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.082 U	0.077 U	0.081 U	0.084 U	0.082 U	0.074 U	0.082 U	0.077 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.27 U	0.28 U	0.29 U	0.28 U	0.25 U	0.28 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.014 U	0.015 U	0.015 U	0.015 U	0.013 U	0.015 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.019 U	0.02 U	0.02 U	0.02 U	0.018 U	0.02 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0084 U	0.008 U	0.0084 U	0.0087 U	0.0085 U	0.0076 U	0.0085 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0094 U	0.0089 U	0.0094 U	0.0098 U	0.0095 U	0.0086 U	0.0095 U	0.0089 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0082 U	0.0077 U	0.0081 U	0.0085 U	0.0083 U	0.0074 U	0.013 J	0.0077 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.015 U	0.016 U	0.017 U	0.016 U	0.015 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.011 U	0.013 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0099 U	0.0093 U	0.0098 U	0.01 U	0.013 J	0.009 U	0.01 U	0.0093 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.039 U	0.041 U	0.043 U	0.042 U	0.038 U	0.042 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.099 U	0.094 U	0.098 U	0.1 U	0.1 U	0.09 U	0.1 U	0.093 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U	0.014 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0096 U	0.009 U	0.0095 U	0.0099 U	0.0096 U	0.0087 U	0.0096 U	0.009 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.013 U	0.014 U	0.015 U	0.014 U	0.013 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 U	0.18 U	0.18 U	0.18 U	0.16 U	0.18 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.029 J	0.0085 U	0.0089 U	0.0095 J	0.013 J	0.0082 U	0.067 J	0.0085 U
Acenaphthylene	--	--	--	mg/kg	0.0096 U	0.009 U	0.0095 U	0.0099 U	0.0096 U	0.0087 U	0.0096 U	0.009 U
Acetophenone	780	12000	0.058	mg/kg	0.0081 U	0.0076 U	0.008 U	0.0084 U	0.0082 U	0.0073 U	0.0082 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg	0.052 J	0.033 U	0.035 U	0.036 U	0.036 U	0.032 U	0.17 J	0.033 U
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.016 U	0.016 U	0.017 U	0.017 U	0.015 U	0.017 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.027 U	0.028 U	0.029 U	0.029 U	0.026 U	0.029 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.3**	0.038	0.031 U	0.032 U	0.13	0.028 U	**1.5**	0.14
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.4**	**0.046**	0.012 J	0.012 U	**0.15**	0.01 U	**2**	**0.16**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.78**	0.076	0.02 J	0.028 J	**0.22**	0.013 U	**2.9**	**0.27**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.59	0.043 J	0.021 U	0.032 J	0.28 J	0.019 U	2.8	0.28 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.32	0.03 J	0.016 U	0.017 U	0.077	0.015 U	0.96	0.099
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0088 U	0.0083 U	0.0087 U	0.0091 U	0.0088 U	0.008 U	0.0088 U	0.0083 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.046 J	0.014 U	0.014 U	0.015 U	0.015 U	0.013 U	0.065 J	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.01 U	0.012 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.025 U	0.027 U	0.028 U	0.027 U	0.024 U	0.027 U	0.025 U
Carbazole	--	--	--	mg/kg	0.069 J	0.0087 U	0.0092 U	0.0095 U	0.03 J	0.0084 U	0.2 J	0.028 J
Chrysene	**16**	290	1.2	mg/kg	0.55	0.057 J	0.022 J	0.022 J	0.18 J	0.0092 U	2.2	0.19 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.12 J+**	0.018 U	0.019 U	0.02 U	**0.032 J**	0.018 U	**0.53**	**0.049**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.013 J	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U	0.036 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0096 U	0.011 U	0.0099 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-095	CFSB-095	CFSB-097	CFSB-097	CFSB-097	CFSB-098	CFSB-098
					Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFSB-095-SO-0-0.5	CFSB-095-SO-0.5-2.0	CFSB-095-SO-10-12	CFSB-097-SO-0-0.5	CFSB-097-SO-0.5-2	CFSB-097-SO-10-12	CFSB-098-SO-0-0.5	CFSB-098-SO-0.5-2
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.018 U	0.019 U	0.02 U	0.019 U	0.017 U	0.019 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.57	0.071 J	0.021 J	0.051 J	0.26 J	0.01 U	2.5	0.23 J
Fluorene	240	3000	0.54	mg/kg		0.022 J	0.0076 U	0.008 U	0.0085 J	0.011 J	0.0073 U	0.049 J	0.009 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.014 U	0.015 U	0.016 U	0.015 U	0.014 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.0099 U	0.01 U	0.011 U	0.011 U	0.0095 U	0.011 U	0.0098 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 UJ	0.022 UJ	0.023 UJ	0.024 U	0.023 U	0.021 U	0.023 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.014 U	0.013 U	0.014 U	0.014 U	0.014 U	0.012 U	0.014 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**0.55 J+**	0.042 J+	0.025 U	0.029 J	**0.23**	0.022 U	**2.9**	**0.3**
Isophorone	570	2400	0.026	mg/kg		0.008 U	0.0075 U	0.56	0.0082 U	0.0081 U	0.0072 U	0.008 U	0.0075 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.01 J	0.0089 U	0.0094 U	0.0098 U	0.0095 U	0.0086 U	0.032 J	0.0089 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.011 U	0.013 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.034 U	0.032 U	0.033 U	0.035 U	0.034 U	0.031 U	0.034 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.045 U	0.042 U	0.045 U	0.046 U	0.045 U	0.041 U	0.045 U	0.042 U
Phenanthrene	--	--	--	mg/kg		0.31 J	0.051 J	0.015 J	0.047 J	0.16 J	0.009 U	1.2	0.13 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.011 U	0.012 U	0.013 U	0.012 U	0.011 U	0.012 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg		0.62	0.07 J	0.022 J	0.043 J	0.23 J	0.015 U	2.4	0.25 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-098	CFSB-099	CFSB-099	CFSB-099	CFSB-100	CFSB-100	CFSB-100	CFSB-101
				Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	7/21/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-098-SO-10-12	CFSB-099-SO-0-0.5	CFSB-099-SO-0.5-2	CFSB-099-SO-10-12	CFSB-100-SO-0-0.5	CFSB-100-SO-0.5-2	CFSB-100-SO-10-12	CFSB-101-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.029 U	0.037 U	0.03 U	0.03 U	0.03 U	0.03 U	0.031 U	0.038 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.033 U	0.026 U	0.026 U	0.026 U	0.026 U	0.027 U	0.034 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.092 U	0.12 U	0.093 U	0.093 U	0.093 U	0.093 U	0.096 U	0.12 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 UJ	0.018 U	0.014 UJ	0.014 UJ	0.014 UJ	0.014 UJ	0.015 UJ	0.019 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.032 U	0.041 U	0.033 U	0.033 U	0.033 U	0.033 U	0.034 U	0.042 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.034 U	0.044 U	0.034 U	0.034 U	0.034 U	0.035 U	0.036 U	0.045 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0098 U	0.012 U	0.0098 U	0.0099 U	0.0098 U	0.0099 U	0.01 U	0.013 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0081 U	0.01 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0085 U	0.011 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.076 U	0.096 U	0.076 U	0.076 U	0.076 U	0.076 U	0.079 U	0.099 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.33 U	0.26 U	0.26 U	0.26 U	0.26 U	0.27 U	0.34 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.017 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.018 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.023 U	0.018 U	0.018 U	0.018 U	0.019 U	0.019 U	0.024 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0078 U	0.0099 U	0.0079 U	0.0079 U	0.0079 U	0.0079 U	0.0082 U	0.01 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0088 U	0.011 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0092 U	0.011 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0076 U	0.0097 U	0.0076 U	0.0077 U	0.0076 U	0.0077 U	0.008 U	0.01 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.019 U	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.02 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.014 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.015 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.015 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.015 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0092 U	0.012 U	0.0092 U	0.0092 U	0.0092 U	0.0093 U	0.0096 U	0.012 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.038 U	0.049 U	0.039 U	0.039 U	0.039 U	0.039 U	0.04 U	0.05 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.013 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.013 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.092 U	0.12 U	0.092 U	0.092 U	0.092 U	0.093 U	0.096 U	0.12 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.014 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.014 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.019 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.019 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0089 U	0.011 U	0.0089 U	0.0089 U	0.0089 U	0.0089 U	0.0093 U	0.012 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.013 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.014 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.017 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.017 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.21 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.22 U
Acenaphthene	360	4500	0.55	mg/kg	0.0083 U	0.011 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0087 U	0.011 U
Acenaphthylene	--	--	--	mg/kg	0.0089 U	0.011 U	0.0089 U	0.0089 U	0.0089 U	0.0089 U	0.0093 U	0.012 U
Acetophenone	780	12000	0.058	mg/kg	0.0075 U	0.0095 U	0.0075 U	0.0075 U	0.0075 U	0.0076 U	0.0079 U	0.0098 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.042 U	0.033 U	0.033 U	0.033 U	0.033 U	0.034 U	0.043 U
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.019 U	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.02 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 U	0.033 U	0.026 U	0.026 U	0.026 U	0.026 U	0.027 U	0.038 J
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	0.045 J	0.029 J	0.029 U	0.14	0.094	0.03 U	0.042 J
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.01 U	**0.055 J**	**0.024 J**	0.01 U	**0.15**	**0.091**	0.011 U	0.014 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.013 U	0.12 J	0.039	0.014 U	**0.28**	**0.19**	0.014 U	0.084
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.058 J	0.033 J	0.02 U	0.27 J	0.14 J	0.021 U	0.057 J+
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.015 U	0.019 UJ	0.015 U	0.015 U	0.077	0.063	0.016 U	0.022 J
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.014 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.014 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0081 U	0.01 U	0.0082 U	0.0082 U	0.0082 U	0.0082 U	0.0085 U	0.011 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.016 J	0.038 J	0.14 J	0.015 J	0.016 J	0.019 J	0.014 U	0.018 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.014 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.014 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.032 U	0.025 U	0.025 U	0.025 U	0.025 U	0.026 U	0.032 U
Carbazole	--	--	--	mg/kg	0.0085 U	0.011 J	0.0086 U	0.0086 U	0.02 J	0.01 J	0.0089 U	0.011 U
Chrysene	**16**	290	1.2	mg/kg	0.0094 U	0.089 J	0.03 J	0.0094 U	0.18 J	0.14 J	0.0098 U	0.067 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.023 UJ	0.018 U	0.018 U	**0.053**	**0.024 J**	0.019 U	0.023 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.01 U	0.013 U	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.014 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0098 U	0.012 U	0.0098 U	0.0099 U	0.0098 U	0.0099 U	0.01 U	0.013 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-098	CFSB-099	CFSB-099	CFSB-099	CFSB-100	CFSB-100	CFSB-100	CFSB-101
				Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	7/21/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-098-SO-10-12	CFSB-099-SO-0-0.5	CFSB-099-SO-0.5-2	CFSB-099-SO-10-12	CFSB-100-SO-0-0.5	CFSB-100-SO-0.5-2	CFSB-100-SO-10-12	CFSB-101-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.013 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.013 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.01 U	0.013 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.014 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.022 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.023 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.01 U	0.079 J	0.042 J	0.01 U	0.21 J	0.13 J	0.011 U	0.053 J
Fluorene	240	3000	0.54	mg/kg	0.0075 U	0.0095 U	0.0075 U	0.0075 U	0.0075 U	0.0076 U	0.0079 U	0.0098 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.018 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.018 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0097 U	0.012 U	0.0097 U	0.0097 U	0.0097 U	0.0098 U	0.01 U	0.013 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.021 U	0.027 UJ	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.028 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.016 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.017 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.023 U	0.06 J	0.036	0.023 U	**0.27**	0.15	0.024 U	0.061 J+
Isophorone	570	2400	0.026	mg/kg	0.0074 U	0.0094 U	0.0074 U	0.0074 U	0.0074 U	0.0075 U	0.0077 U	0.0097 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0088 U	0.011 U	0.0088 U	0.0088 U	0.0088 U	0.0088 U	0.0092 U	0.011 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.014 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.014 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.015 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.015 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.031 U	0.04 U	0.031 U	0.031 U	0.031 U	0.032 U	0.033 U	0.041 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 U	0.053 U	0.042 U	0.042 U	0.042 U	0.042 U	0.044 U	0.055 U
Phenanthrene	--	--	--	mg/kg	0.0092 U	0.056 J	0.032 J	0.0092 U	0.093 J	0.076 J	0.0096 U	0.037 J
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.014 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.015 U
Pyrene	**180**	2300	1.3	mg/kg	0.016 U	0.078 J	0.035 J	0.016 U	0.21 J	0.14 J	0.016 U	0.058 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-101	CFSB-101	CFSB-102	CFSB-102	CFSB-102	CFSB-104	CFSB-104	CFSB-104
			Sample Date:		7/21/2016	7/21/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-101-SO-0.5-2	CFSB-101-SO-10-12	CFSB-102-SO-0-0.5	CFSB-102-SO-0.5-2	CFSB-102-SO-10-12	CFSB-104-SO-0-0.5	CFSB-104-SO-0.5-2	CFSB-104-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.038 U	0.037 U	0.037 U	0.032 U	0.031 U	0.046 U	0.041 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.033 U	0.032 U	0.032 U	0.028 U	0.027 U	0.04 U	0.036 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.12 U	0.12 U	0.11 U	0.1 U	0.097 U	0.15 U	0.13 U	0.098 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.018 U	0.018 U	0.018 U	0.015 U	0.015 U	0.022 U	0.02 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.042 U	0.041 U	0.04 U	0.035 U	0.034 U	0.051 U	0.046 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.044 U	0.043 U	0.043 U	0.037 U	0.036 U	0.054 U	0.048 U	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.01 U	0.015 U	0.014 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.01 U	0.01 U	0.01 U	0.0088 U	0.0085 U	0.013 U	0.011 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.098 U	0.095 U	0.094 U	0.082 U	0.079 U	0.12 U	0.11 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.34 U	0.33 U	0.32 U	0.28 U	0.27 U	0.41 U	0.37 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.018 U	0.017 U	0.017 U	0.015 U	0.014 U	0.022 U	0.019 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.024 U	0.023 U	0.023 U	0.02 U	0.019 U	0.029 U	0.026 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.01 U	0.0098 U	0.0097 U	0.0085 U	0.0082 U	0.012 U	0.011 U	0.0083 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.011 U	0.011 U	0.011 U	0.0095 U	0.0092 U	0.014 U	0.012 U	0.0093 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0098 U	0.0095 U	0.0095 U	0.0083 U	0.008 U	0.012 U	0.011 U	0.0081 U
2-Methylphenol	320	4100	0.075	mg/kg	0.019 U	0.019 U	0.019 U	0.016 U	0.016 U	0.024 U	0.021 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.015 U	0.014 U	0.014 U	0.012 U	0.012 U	0.018 U	0.016 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.015 U	0.015 U	0.014 U	0.013 U	0.012 U	0.018 U	0.016 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.012 U	0.012 U	0.011 U	0.01 U	0.0096 U	0.014 U	0.013 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.05 U	0.048 U	0.048 U	0.042 U	0.04 U	0.061 U	0.054 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.011 U	0.016 U	0.014 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.12 U	0.12 U	0.11 U	0.1 U	0.096 U	0.15 U	0.13 U	0.098 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.014 U	0.014 U	0.013 U	0.012 U	0.011 U	0.017 U	0.015 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.019 U	0.019 U	0.018 U	0.016 U	0.016 U	0.023 U	0.021 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.011 U	0.011 U	0.011 U	0.0096 U	0.0093 U	0.014 U	0.012 U	0.0094 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.011 U	0.016 U	0.015 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.017 U	0.016 U	0.016 U	0.014 U	0.014 U	0.021 U	0.018 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.21 U	0.21 U	0.21 U	0.18 U	0.17 U	0.26 U	0.23 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.011 U	0.01 U	0.01 U	0.0091 U	0.0087 U	0.013 U	0.012 U	0.0089 U
Acenaphthylene	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.0096 U	0.0093 U	0.014 U	0.012 U	0.0094 U
Acetophenone	780	12000	0.058	mg/kg	0.0097 U	0.0094 U	0.0093 U	0.0082 U	0.0079 U	0.012 U	0.011 U	0.008 U
Anthracene	1800	23000	5.8	mg/kg	0.042 U	0.041 U	0.041 U	0.036 U	0.034 U	0.052 U	0.046 U	0.035 U
Atrazine	2.4	10	0.0002	mg/kg	0.02 U	0.019 U	0.019 U	0.017 U	0.016 U	0.024 U	0.022 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.034 U	0.033 U	0.033 U	0.029 U	0.028 U	0.041 U	0.037 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.037 U	0.036 U	0.11	0.04	0.03 U	**0.18**	0.11	0.031 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.013 U	0.013 U	**0.13**	**0.051**	0.011 U	**0.25**	**0.16**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.017 U	0.017 U	**0.22**	0.081	0.014 U	**0.35**	**0.23**	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.026 U	0.025 U	0.25 J	0.21 J	0.021 U	0.33 J	0.26 J	0.021 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.019 U	0.019 U	0.079	0.032 J	0.016 U	0.15	0.066	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.014 U	0.013 U	0.013 U	0.012 U	0.011 U	0.017 U	0.015 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.01 U	0.01 U	0.01 U	0.0088 U	0.0085 U	0.013 U	0.011 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.017 U	0.017 U	0.017 U	0.015 U	0.014 U	0.021 U	0.019 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.014 U	0.013 U	0.013 U	0.012 U	0.011 U	0.017 U	0.015 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.032 U	0.031 U	0.031 U	0.027 U	0.026 U	0.039 U	0.035 U	0.026 U
Carbazole	--	--	--	mg/kg	0.011 U	0.011 U	0.021 J	0.011 J	0.009 U	0.04 J	0.029 J	0.0091 U
Chrysene	**16**	290	1.2	mg/kg	0.012 U	0.012 U	0.19 J	0.056 J	0.0098 U	0.3 J	0.19 J	0.01 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.023 U	0.022 U	**0.043**	0.019 U	0.019 U	**0.037 J**	**0.054**	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.011 U	0.016 U	0.015 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.01 U	0.015 U	0.014 U	0.01 U

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-101	CFSB-101	CFSB-102	CFSB-102	CFSB-102	CFSB-104	CFSB-104	CFSB-104
				Sample Date:	7/21/2016	7/21/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-101-SO-0.5-2	CFSB-101-SO-10-12	CFSB-102-SO-0-0.5	CFSB-102-SO-0.5-2	CFSB-102-SO-10-12	CFSB-104-SO-0-0.5	CFSB-104-SO-0.5-2	CFSB-104-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.013 U	0.013 U	0.012 U	0.011 U	0.01 U	0.016 U	0.014 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.013 U	0.013 U	0.034 J	0.027 J	0.011 U	0.019 J	0.031 J	0.013 J
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.023 U	0.022 U	0.022 U	0.019 U	0.018 U	0.028 U	0.025 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.013 U	0.013 U	0.16 J	0.06 J	0.011 U	0.27 J	0.18 J	0.011 U
Fluorene	240	3000	0.54	mg/kg	0.0097 U	0.0094 U	0.0093 U	0.0082 U	0.0079 U	0.012 U	0.011 U	0.008 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.018 U	0.018 U	0.017 U	0.015 U	0.015 U	0.022 U	0.02 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.01 U	0.015 U	0.014 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.028 U	0.027 U	0.027 U	0.023 U	0.023 U	0.034 U	0.03 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.016 U	0.016 U	0.016 U	0.014 U	0.013 U	0.02 U	0.018 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.03 U	0.029 U	**0.21**	0.14	0.024 U	**0.33**	**0.23**	0.024 U
Isophorone	570	2400	0.026	mg/kg	0.0096 U	0.0093 U	0.0092 U	0.008 U	0.0078 U	0.012 U	0.01 U	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.011 U	0.011 U	0.011 U	0.0095 U	0.0092 U	0.014 U	0.012 U	0.0093 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.014 U	0.014 U	0.013 U	0.012 U	0.011 U	0.017 U	0.015 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.015 U	0.015 U	0.014 U	0.013 U	0.012 U	0.018 U	0.016 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.04 U	0.039 U	0.039 U	0.034 U	0.033 U	0.049 U	0.044 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.054 U	0.052 U	0.052 U	0.045 U	0.044 U	0.066 U	0.059 U	0.044 U
Phenanthrene	--	--	--	mg/kg	0.012 U	0.012 U	0.075 J	0.028 J	0.0096 U	0.14 J	0.092 J	0.0098 U
Phenol	1900	25000	0.33	mg/kg	0.015 U	0.014 U	0.014 U	0.012 U	0.012 U	0.018 U	0.016 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg	0.02 U	0.02 U	0.18 J	0.07 J	0.016 U	0.32 J	0.22 J	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-109	CFSB-109	CFSB-109	CFSB-110	CFSB-110	CFSB-110	CFSB-113	CFSB-113
			Sample Date:		7/13/2016	7/13/2016	7/13/2016	7/14/2016	7/14/2016	7/14/2016	8/31/2016	8/31/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-109-SO-0-0.5	CFSB-109-SO-0.5-2	CFSB-109-SO-10-12	CFSB-110-SO-0-0.5	CFSB-110-SO-0.5-2	CFSB-110-SO-10-12	CFSB-113-SO-0-0.5	CFSB-113-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.059 U	0.045 U	0.03 U	0.064 U	0.037 U	0.03 U	0.035 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.051 U	0.039 U	0.027 U	0.056 U	0.032 U	0.026 U	0.031 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.18 U	0.14 U	0.095 U	0.2 U	0.11 U	0.093 U	0.11 U	0.097 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.028 U	0.022 U	0.015 U	0.031 U	0.018 U	0.014 U	0.017 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.065 U	0.049 U	0.034 U	0.071 U	0.04 U	0.033 U	0.039 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.068 U	0.052 U	0.035 U	0.075 U	0.043 U	0.035 U	0.041 U	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.02 U	0.015 U	0.01 U	0.021 U	0.012 U	0.0099 U	0.012 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.016 U	0.012 U	0.0084 U	0.018 U	0.01 U	0.0082 U	0.0098 U	0.0085 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.15 U	0.12 U	0.078 U	0.17 U	0.094 U	0.076 U	0.091 U	0.08 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.52 U	0.4 U	0.27 U	0.57 U	0.32 U	0.26 U	0.31 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.027 U	0.021 U	0.014 U	0.03 U	0.017 U	0.014 U	0.016 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.037 U	0.028 U	0.019 U	0.04 U	0.023 U	0.018 U	0.022 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.016 U	0.012 U	0.0081 U	0.017 U	0.0097 U	0.0079 U	0.0094 U	0.0082 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.017 U	0.013 U	0.0091 U	0.019 U	0.011 U	0.0088 U	0.011 U	0.0092 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.015 U	0.012 U	0.0079 U	0.017 U	0.0095 U	0.0077 U	0.0091 U	0.008 U
2-Methylphenol	320	4100	0.075	mg/kg	0.03 U	0.023 U	0.016 U	0.033 U	0.019 U	0.015 U	0.018 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.023 U	0.017 U	0.012 U	0.025 U	0.014 U	0.011 U	0.014 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.023 U	0.018 U	0.012 U	0.025 U	0.014 U	0.012 U	0.014 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.018 U	0.014 U	0.0095 U	0.02 U	0.011 U	0.0092 U	0.011 U	0.0096 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.077 U	0.058 U	0.04 U	0.084 U	0.048 U	0.039 U	0.046 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.02 U	0.016 U	0.011 U	0.022 U	0.013 U	0.01 U	0.012 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.18 U	0.14 U	0.095 U	0.2 U	0.11 U	0.093 U	0.11 U	0.097 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.022 U	0.016 U	0.011 U	0.024 U	0.013 U	0.011 U	0.013 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.029 U	0.023 U	0.015 U	0.032 U	0.018 U	0.015 U	0.018 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.018 U	0.019 J	0.0092 U	0.019 U	0.011 U	0.0089 U	0.011 U	0.0093 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.021 U	0.016 U	0.011 U	0.022 U	0.013 U	0.01 U	0.012 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.026 U	0.02 U	0.013 U	0.028 U	0.016 U	0.013 U	0.016 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.33 U	0.25 U	0.17 U	0.36 U	0.21 U	0.17 U	0.2 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.02 J	0.016 J	0.0086 U	0.018 U	0.01 U	0.0084 U	0.01 J	0.0088 U
Acenaphthylene	--	--	--	mg/kg	0.018 U	0.013 U	0.0092 U	0.019 U	0.011 U	0.0089 U	0.011 U	0.0093 U
Acetophenone	780	12000	0.058	mg/kg	0.015 U	0.011 U	0.0078 U	0.016 U	0.0093 U	0.0076 U	0.009 U	0.0079 U
Anthracene	1800	23000	5.8	mg/kg	0.065 U	0.05 J	0.034 U	0.071 U	0.041 U	0.033 U	0.039 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.031 U	0.023 U	0.016 U	0.033 U	0.019 U	0.015 U	0.018 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.052 U	0.04 U	0.027 U	0.057 U	0.033 U	0.026 U	0.032 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.36**	**0.17**	0.03 U	**0.18**	0.036 U	0.029 U	0.12	0.047
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.48**	**0.22**	0.011 U	**0.23**	0.013 U	0.011 U	**0.17**	**0.054**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.62**	**0.32**	0.014 U	**0.29**	0.11	0.014 U	**0.29**	0.11
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.36 J	1.1	0.02 U	0.9	0.16 J	0.02 U	0.2 J	0.071 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.25	0.14	0.016 U	0.12	0.036 J	0.015 U	0.1	0.036
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.021 U	0.016 U	0.011 U	0.023 U	0.013 U	0.011 U	0.013 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.016 U	0.012 U	0.0084 U	0.018 U	0.01 U	0.0082 U	0.0098 U	0.0085 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.027 U	0.02 U	0.014 U	0.029 U	0.017 U	0.014 U	0.016 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.021 U	0.016 U	0.011 U	0.023 U	0.013 U	0.011 U	0.013 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.049 U	0.038 U	0.026 U	0.054 U	0.031 U	0.025 U	0.03 U	0.026 U
Carbazole	--	--	--	mg/kg	0.073 J	0.1 J	0.0088 U	0.059 J	0.013 J	0.0086 U	0.016 J	0.009 U
Chrysene	**16**	290	1.2	mg/kg	0.55 J	0.26 J	0.0097 U	0.28 J	0.071 J	0.0095 U	0.19 J	0.071 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.036 U	**0.17**	0.019 U	**0.14**	0.022 U	0.018 U	**0.035 J**	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.021 U	0.016 U	0.011 U	0.023 U	0.013 U	0.011 U	0.013 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.02 U	0.015 U	0.01 U	0.021 U	0.012 U	0.0099 U	0.012 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-109	CFSB-109	CFSB-109	CFSB-110	CFSB-110	CFSB-110	CFSB-113	CFSB-113
				Sample Date:	7/13/2016	7/13/2016	7/13/2016	7/14/2016	7/14/2016	7/14/2016	8/31/2016	8/31/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-109-SO-0-0.5	CFSB-109-SO-0.5-2	CFSB-109-SO-10-12	CFSB-110-SO-0-0.5	CFSB-110-SO-0.5-2	CFSB-110-SO-10-12	CFSB-113-SO-0-0.5	CFSB-113-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.02 U	0.015 U	0.01 U	0.022 U	0.012 U	0.01 U	0.012 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.021 U	0.056 J	0.011 U	0.058 J	0.013 U	0.01 U	0.012 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.035 U	0.027 U	0.018 U	0.038 U	0.022 U	0.018 U	0.021 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.56 J	0.23 J	0.011 U	0.24 J	0.054 J	0.014 J	0.2 J	0.076 J
Fluorene	240	3000	0.54	mg/kg	0.02 J	0.011 U	0.0078 U	0.016 U	0.0093 U	0.0076 U	0.009 U	0.0079 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.028 U	0.021 U	0.014 U	0.03 U	0.017 U	0.014 U	0.017 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.019 U	0.015 U	0.01 U	0.021 U	0.012 U	0.0098 U	0.012 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.043 U	0.033 U	0.022 U	0.047 U	0.027 U	0.022 U	0.026 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.025 U	0.019 U	0.013 U	0.027 U	0.016 U	0.013 U	0.015 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**0.38**	**0.91**	0.024 U	**0.66**	0.13	0.023 U	**0.2**	0.071
Isophorone	570	2400	0.026	mg/kg	0.015 U	0.011 U	0.0077 U	0.016 U	0.0092 U	0.0075 U	0.024 J	0.0078 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.017 U	0.013 U	0.0091 U	0.019 U	0.011 U	0.0088 U	0.011 U	0.0092 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.022 U	0.016 U	0.011 U	0.024 U	0.013 U	0.011 U	0.013 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.023 U	0.018 U	0.012 U	0.025 U	0.014 U	0.012 U	0.014 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.062 U	0.048 U	0.032 U	0.068 U	0.039 U	0.032 U	0.038 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.083 U	0.063 U	0.043 U	0.091 U	0.052 U	0.042 U	0.05 U	0.044 U
Phenanthrene	--	--	--	mg/kg	0.27 J	0.12 J	0.0095 U	0.12 J	0.033 J	0.0092 U	0.1 J	0.047 J
Phenol	1900	25000	0.33	mg/kg	0.022 U	0.017 U	0.012 U	0.025 U	0.014 U	0.011 U	0.014 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg	0.57 J	0.21 J	0.016 U	0.23 J	0.061 J	0.016 U	0.22 J	0.076 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-113	CFSB-114	CFSB-114	CFSB-114	CFSB-115	CFSB-115	CFSB-115	CFSB-116	CFSB-116
				Sample Date:	8/31/2016	7/12/2016	7/12/2016	7/12/2016	8/31/2016	8/31/2016	8/31/2016	7/22/2016	7/22/2016
				Sample Depth (ft-bls):	2 - 4	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	2 - 4	10 - 12	0 - 0.5
				Sample Designation:	CFSB-113-SO-2-4	CFSB-114-SO-0-0.5	CFSB-114-SO-0.5-2	CFSB-114-SO-10-12	CFSB-115-SO-0-0.5	CFSB-115-SO-0.5-2	CFSB-115-SO-2-4	CFSB-116-SO-10-12	CFSB-116-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	0.031 U	0.03 U	0.033 U	0.03 U	0.03 U	0.034 U	0.046 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.027 U	0.027 U	0.027 U	0.029 U	0.026 U	0.026 U	0.03 U	0.04 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.095 U	0.096 U	0.096 U	0.095 U	0.1 U	0.093 U	0.094 U	0.11 U	0.14 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.014 U	0.014 U	0.016 U	0.022 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.034 U	0.034 U	0.034 U	0.037 U	0.033 U	0.033 U	0.038 U	0.05 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.036 U	0.036 U	0.035 U	0.039 U	0.035 U	0.035 U	0.04 U	0.053 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0099 U	0.01 U	0.011 U	0.015 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0092 U	0.0082 U	0.0083 U	0.0094 U	0.013 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.078 U	0.079 U	0.079 U	0.078 U	0.086 U	0.076 U	0.077 U	0.088 U	0.12 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.27 U	0.27 U	0.27 U	0.29 U	0.26 U	0.27 U	0.3 U	0.4 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.016 U	0.021 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.019 U	0.019 U	0.021 U	0.018 U	0.019 U	0.021 U	0.028 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.0081 U	0.0081 U	0.0081 U	0.0088 U	0.0079 U	0.008 U	0.0091 U	0.012 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0099 U	0.0088 U	0.0089 U	0.01 U	0.014 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0079 U	0.0079 U	0.0079 U	0.0079 U	0.0086 U	0.0077 U	0.0077 U	0.0088 U	0.012 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.015 U	0.015 U	0.017 U	0.023 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.013 U	0.018 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.013 U	0.018 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0092 U	0.0093 U	0.011 U	0.014 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.04 U	0.04 U	0.04 U	0.043 U	0.039 U	0.039 U	0.045 U	0.06 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.01 U	0.01 U	0.012 U	0.016 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.095 U	0.095 U	0.095 U	0.1 U	0.093 U	0.094 U	0.11 U	0.14 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.013 U	0.017 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.015 U	0.015 U	0.017 U	0.015 U	0.015 U	0.017 U	0.023 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.01 U	0.0089 U	0.009 U	0.01 U	0.014 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.01 U	0.011 U	0.012 U	0.016 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.014 U	0.014 U	0.013 U	0.015 U	0.013 U	0.013 U	0.015 U	0.02 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.17 U	0.19 U	0.17 U	0.17 U	0.19 U	0.26 U
Acenaphthene	360	4500	0.55	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0086 U	0.0094 U	0.0084 U	0.0085 U	0.0097 U	0.013 U
Acenaphthylene	--	--	--	mg/kg	0.0092 U	0.0092 U	0.0092 U	0.0092 U	0.01 U	0.0089 U	0.009 U	0.01 U	0.014 U
Acetophenone	780	12000	0.058	mg/kg	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0085 U	0.0076 U	0.0076 U	0.0087 U	0.012 U
Anthracene	1800	23000	5.8	mg/kg	0.034 U	0.034 U	0.034 U	0.034 U	0.037 U	0.033 U	0.033 U	0.038 U	0.051 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.015 U	0.016 U	0.018 U	0.024 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.027 U	0.027 U	0.03 U	0.026 U	0.027 U	0.03 U	0.041 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.03 U	0.05	0.03 U	0.03 U	0.059	0.052	0.029 U	0.033 U	0.11
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.024 J**	**0.07**	0.011 U	0.011 U	**0.084**	**0.06**	**0.025 J**	0.012 U	**0.15**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.042	0.11	0.014 U	0.014 U	**0.17**	0.13	0.055	0.019 J	**0.25**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.024 J	0.076 J	0.021 U	0.02 U	0.11 J	0.087 J	0.03 J	0.023 U	0.2 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.019 J	0.036	0.016 U	0.016 U	0.06	0.049	0.016 J	0.017 U	0.083
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.015 J	0.012 U	0.011 U	0.011 U	0.012 U	0.017 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0092 U	0.0082 U	0.0083 U	0.0094 U	0.017 J
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U	0.014 U	0.039 J	0.015 U	0.014 U	0.014 U	0.016 U	0.021 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.016 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.026 U	0.026 U	0.026 U	0.028 U	0.025 U	0.025 U	0.029 U	0.038 U
Carbazole	--	--	--	mg/kg	0.0088 U	0.0089 J	0.0089 U	0.0088 U	0.0097 U	0.0086 U	0.0087 U	0.0099 U	0.016 J
Chrysene	**16**	290	1.2	mg/kg	0.029 J	0.081 J	0.0097 U	0.0097 U	0.1 J	0.087 J	0.037 J	0.011 U	0.17 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.018 U	0.018 U	0.021 U	**0.05 J**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.016 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0099 U	0.01 U	0.011 U	0.015 U

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-113	CFSB-114	CFSB-114	CFSB-114	CFSB-115	CFSB-115	CFSB-115	CFSB-116	CFSB-116
				Sample Date:	8/31/2016	7/12/2016	7/12/2016	7/12/2016	8/31/2016	8/31/2016	8/31/2016	7/22/2016	7/22/2016
				Sample Depth (ft-bls):	2 - 4	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	2 - 4	10 - 12	0 - 0.5
				Sample Designation:	CFSB-113-SO-2-4	CFSB-114-SO-0-0.5	CFSB-114-SO-0.5-2	CFSB-114-SO-10-12	CFSB-115-SO-0-0.5	CFSB-115-SO-0.5-2	CFSB-115-SO-2-4	CFSB-116-SO-10-12	CFSB-116-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.012 U	0.015 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.01 U	0.011 U	0.012 U	0.016 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.018 U	0.018 U	0.018 U	0.02 U	0.018 U	0.018 U	0.02 U	0.027 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.029 J	0.075 J	0.011 U	0.011 J	0.089 J	0.091 J	0.035 J	0.012 U	0.16 J
Fluorene	240	3000	0.54	mg/kg	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0085 U	0.0076 U	0.0076 U	0.0087 U	0.012 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.016 U	0.014 U	0.014 U	0.016 U	0.022 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0098 U	0.0099 U	0.011 U	0.015 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.022 U	0.022 U	0.022 U	0.024 U	0.022 U	0.022 U	0.025 U	0.033 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U	0.013 U	0.015 U	0.02 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.028 J	0.075	0.024 U	0.024 U	0.12	0.093	0.027 J	0.027 U	**0.23**
Isophorone	570	2400	0.026	mg/kg	0.0077 U	0.0077 U	0.0077 U	0.0077 U	0.02 J	0.0095 J	0.0075 U	0.0086 U	0.011 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0091 U	0.0091 U	0.0091 U	0.0091 U	0.0099 U	0.0088 U	0.0089 U	0.01 U	0.015 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.013 U	0.017 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.013 U	0.018 UJ
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.032 U	0.032 U	0.032 U	0.035 U	0.032 U	0.032 U	0.036 U	0.048 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.043 U	0.043 U	0.043 U	0.043 U	0.047 U	0.042 U	0.042 U	0.048 U	0.065 U
Phenanthrene	--	--	--	mg/kg	0.017 J	0.044 J	0.0095 U	0.0095 U	0.044 J	0.053 J	0.019 J	0.011 U	0.089 J
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.011 U	0.011 U	0.013 U	0.017 U
Pyrene	**180**	2300	1.3	mg/kg	0.029 J	0.1 J	0.016 U	0.016 U	0.096 J	0.091 J	0.032 J	0.018 U	0.17 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-116	CFSB-118	CFSB-118	CFSB-118	CFSB-119	CFSB-119	CFSB-119	CFSB-120
			Sample Date:		7/22/2016	7/21/2016	7/21/2016	7/21/2016	7/12/2016	7/12/2016	7/12/2016	5/18/2016
			Sample Depth (ft-bls):		0.5 - 2	0 - 0.5	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-116-SO-0.5-2	CFSB-118-SO-0-0.5	CFSB-118-SO-10-12	CFSB-118-SO-0.5-2	CFSB-119-SO-0-0.5	CFSB-119-SO-0.5-2	CFSB-119-SO-10-12	CFSB-120-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.037 U	0.035 U	0.034 U	0.032 U	0.033 U	0.033 U	0.03 U	0.033 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.032 U	0.031 U	0.03 U	0.028 U	0.029 U	0.029 U	0.026 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.093 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.018 U	0.017 U	0.017 U	0.016 U	0.016 UJ	0.016 UJ	0.014 UJ	0.016 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.041 U	0.039 U	0.038 U	0.036 U	0.036 UJ	0.036 UJ	0.033 UJ	0.036 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.043 U	0.041 U	0.04 U	0.038 U	0.038 U	0.038 U	0.035 U	0.038 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0099 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.01 U	0.0098 U	0.0095 U	0.009 U	0.0091 U	0.009 U	0.0082 U	0.009 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.095 U	0.091 U	0.088 U	0.084 U	0.085 U	0.084 U	0.077 U	0.084 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.33 U	0.31 U	0.3 U	0.29 U	0.29 U	0.29 U	0.26 U	0.29 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.017 U	0.016 U	0.016 U	0.015 U	0.015 U	0.015 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.023 U	0.022 U	0.021 U	0.02 U	0.021 U	0.02 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0098 U	0.0094 U	0.0091 U	0.0086 U	0.0088 U	0.0087 U	0.0079 U	0.0087 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.011 U	0.011 U	0.01 U	0.0097 U	0.0098 U	0.0097 U	0.0089 U	0.0097 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0096 U	0.0092 U	0.029 J	0.013 J	0.0085 U	0.0085 U	0.0077 U	0.0085 U
2-Methylphenol	320	4100	0.075	mg/kg	0.019 U	0.018 U	0.017 U	0.017 U	0.017 U	0.017 U	0.015 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg	0.014 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg	0.015 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.012 U	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0093 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.048 U	0.046 U	0.045 U	0.042 U	0.043 U	0.043 U	0.039 U	0.043 U
3-Nitroaniline	--	--	--	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.093 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.014 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.019 U	0.018 U	0.017 U	0.016 U	0.017 U	0.016 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.011 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.0099 U	0.009 U	0.0098 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.01 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.016 U	0.016 U	0.015 U	0.014 U	0.015 U	0.014 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.21 U	0.2 U	0.19 U	0.18 U	0.19 U	0.18 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.01 U	0.01 U	0.0097 U	0.0092 U	0.0093 U	0.0093 U	0.0085 U	0.0093 U
Acenaphthylene	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.0099 U	0.009 U	0.0098 U
Acetophenone	780	12000	0.058	mg/kg	0.0094 U	0.009 U	0.0087 U	0.0083 U	0.011 J	0.0083 U	0.0076 U	0.0083 U
Anthracene	1800	23000	5.8	mg/kg	0.041 U	0.039 U	0.038 U	0.036 U	0.037 U	0.036 U	0.033 U	0.036 U
Atrazine	2.4	10	0.0002	mg/kg	0.019 U	0.018 U	0.018 U	0.017 U	0.017 U	0.017 U	0.016 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.033 U	0.032 U	0.031 U	0.029 U	0.088 J	0.029 U	0.027 U	0.029 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.036 U	0.035 U	0.033 U	0.032 U	0.13	0.032 U	0.029 U	0.032 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.013 U	0.013 U	0.012 U	**0.018 J**	**0.18**	**0.024 J**	**0.019 J**	**0.017 J**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.017 U	0.016 U	0.016 U	0.029 J	**0.35**	0.036 J	0.028 J	0.044
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.025 U	0.024 U	0.023 U	0.022 U	0.24 J	0.022 U	0.02 U	0.022 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.019 U	0.018 U	0.017 U	0.017 U	0.1	0.017 U	0.015 U	0.02 J
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.013 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.01 U	0.0098 U	0.0095 U	0.009 U	0.0091 U	0.009 U	0.0082 U	0.009 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.017 U	0.016 U	0.016 U	0.015 U	0.015 U	0.015 U	0.014 U	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.031 U	0.03 U	0.029 U	0.027 U	0.028 U	0.046 J	0.025 U	0.028 U
Carbazole	--	--	--	mg/kg	0.011 U	0.01 U	0.01 U	0.0094 U	0.024 J	0.0095 U	0.0087 U	0.0095 U
Chrysene	**16**	290	1.2	mg/kg	0.012 U	0.011 U	0.011 U	0.026 J	0.23 J	0.026 J	0.019 J	0.032 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.023 U	0.022 U	0.021 U	0.02 U	**0.051**	0.02 U	0.018 U	0.02 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0099 U	0.011 U

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-116	CFSB-118	CFSB-118	CFSB-118	CFSB-119	CFSB-119	CFSB-119	CFSB-120
				Sample Date:	7/22/2016	7/21/2016	7/21/2016	7/21/2016	7/12/2016	7/12/2016	7/12/2016	5/18/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-116-SO-0.5-2	CFSB-118-SO-0-0.5	CFSB-118-SO-10-12	CFSB-118-SO-0.5-2	CFSB-119-SO-0-0.5	CFSB-119-SO-0.5-2	CFSB-119-SO-10-12	CFSB-120-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.034 J	0.016 J	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.022 U	0.021 U	0.02 U	0.019 U	0.02 U	0.019 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.013 U	0.012 U	0.012 U	0.033 J	0.21 J	0.026 J	0.019 J	0.028 J
Fluorene	240	3000	0.54	mg/kg	0.0094 U	0.009 U	0.0087 U	0.0083 U	0.0084 U	0.0083 U	0.0076 U	0.0083 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.018 U	0.017 U	0.016 U	0.015 U	0.016 UJ	0.016 UJ	0.014 UJ	0.016 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.012 U	0.012 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ	0.0098 UJ	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.027 U	0.026 U	0.025 U	0.024 U	0.024 U	0.024 U	0.022 U	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.016 U	0.015 U	0.015 U	0.014 U	0.014 U	0.014 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.029 U	0.028 U	0.027 U	0.025 U	**0.22**	0.025 U	0.023 U	0.025 U
Isophorone	570	2400	0.026	mg/kg	0.0093 U	0.0089 U	0.0086 U	0.0082 U	0.0083 U	0.0082 U	0.0075 U	0.0082 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.011 U	0.011 U	0.01 U	0.0097 U	0.0098 U	0.0097 U	0.0089 U	0.0097 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.014 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.015 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.039 U	0.038 U	0.036 U	0.035 U	0.035 U	0.035 U	0.032 U	0.035 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.052 U	0.05 U	0.049 U	0.046 U	0.047 UJ	0.046 UJ	0.042 UJ	0.046 U
Phenanthrene	--	--	--	mg/kg	0.012 U	0.011 U	0.011 U	0.013 J	0.1 J	0.021 J	0.013 J	0.016 J
Phenol	1900	25000	0.33	mg/kg	0.014 U	0.014 U	0.013 U	0.012 U	0.013 U	0.013 U	0.011 U	0.013 U
Pyrene	**180**	2300	1.3	mg/kg	0.02 U	0.019 U	0.018 U	0.032 J	0.29 J+	0.033 J+	0.025 J+	0.027 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-121	CFSB-122	CFSB-122
					Sample Date:	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/19/2016	5/19/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-DUP1-SO	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.037 U	0.03 U	0.032 U	0.032 U	0.031 UJ	0.029 U	0.045 U	0.046 J
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.032 U	0.026 U	0.028 U	0.028 U	0.027 U	0.026 U	0.039 U	0.037 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.12 U	0.093 U	0.1 U	0.1 U	0.097 U	0.092 U	0.14 U	0.13 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.018 UJ	0.014 UJ	0.015 UJ	0.016 U	0.015 UJ	0.014 UJ	0.022 U	0.021 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.041 U	0.033 U	0.035 U	0.036 U	0.034 U	0.032 U	0.049 U	0.047 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.043 U	0.035 U	0.037 U	0.038 U	0.036 UJ	0.034 U	0.052 U	0.05 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.012 U	0.0099 U	0.011 U	0.011 U	0.01 U	0.0098 U	0.015 U	0.014 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.01 U	0.0082 U	0.0089 U	0.0089 U	0.0085 U	0.0081 U	0.012 U	0.012 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.096 U	0.077 U	0.083 U	0.083 U	0.079 UJ	0.076 U	0.12 U	0.11 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.33 U	0.26 U	0.28 U	0.29 U	0.27 UJ	0.26 U	0.4 U	0.38 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.017 U	0.014 U	0.015 U	0.015 U	0.014 U	0.014 U	0.021 U	0.02 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.023 U	0.019 U	0.02 U	0.02 U	0.019 U	0.018 U	0.028 U	0.027 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0099 U	0.0079 U	0.0085 U	0.0086 U	0.0082 UJ	0.0078 U	0.012 U	0.011 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.011 U	0.0089 U	0.0096 U	0.0096 U	0.0092 U	0.0088 U	0.013 U	0.013 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0096 U	0.0077 U	0.0083 U	0.0084 U	0.008 U	0.0076 U	0.012 U	0.011 U
2-Methylphenol	320	4100	0.075	mg/kg		0.019 U	0.015 U	0.016 U	0.017 U	0.016 U	0.015 U	0.023 U	0.022 U
2-Nitroaniline	63	800	0.008	mg/kg		0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.017 U	0.016 U
2-Nitrophenol	--	--	--	mg/kg		0.015 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.018 U	0.017 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.012 U	0.0093 U	0.01 U	0.01 U	0.0096 U	0.0092 U	0.014 U	0.013 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.049 U	0.039 U	0.042 U	0.042 U	0.04 U	0.038 U	0.059 U	0.056 U
3-Nitroaniline	--	--	--	mg/kg		0.013 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.016 U	0.015 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.12 U	0.093 U	0.1 U	0.1 U	0.096 UJ	0.092 U	0.14 U	0.13 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.014 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.017 U	0.016 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.019 U	0.015 U	0.016 U	0.016 U	0.016 U	0.015 U	0.023 U	0.021 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.011 U	0.009 U	0.0097 U	0.0097 U	0.0093 U	0.0089 U	0.014 U	0.013 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.013 U	0.01 U	0.011 U	0.011 U	0.011 U	0.01 U	0.016 U	0.015 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.016 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U	0.02 U	0.019 U
4-Nitrophenol	--	--	--	mg/kg		0.21 UJ	0.17 UJ	0.18 U	0.18 U	0.17 UJ	0.17 UJ	0.25 U	0.24 U
Acenaphthene	360	4500	0.55	mg/kg		0.011 U	0.0085 U	0.0091 U	0.0092 U	0.0087 U	0.0083 U	0.013 U	0.012 U
Acenaphthylene	--	--	--	mg/kg		0.011 U	0.009 U	0.0097 U	0.0097 U	0.0093 U	0.0089 U	0.014 U	0.013 U
Acetophenone	780	12000	0.058	mg/kg		0.0095 U	0.0076 U	0.0082 U	0.0083 U	0.0079 U	0.0075 U	0.011 U	0.011 U
Anthracene	1800	23000	5.8	mg/kg		0.041 U	0.033 U	0.036 U	0.036 U	0.034 U	0.033 U	0.05 U	0.047 U
Atrazine	2.4	10	0.0002	mg/kg		0.019 U	0.016 U	0.017 U	0.017 U	0.016 U	0.015 U	0.023 U	0.022 U
Benzaldehyde	170	820	0.0041	mg/kg		0.033 U	0.027 U	0.029 U	0.029 U	0.028 UJ	0.026 U	0.04 U	0.038 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.036 U	0.029 U	0.091 J	0.043 J	0.03 U	0.029 U	0.044 U	0.042 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		0.013 U	0.011 U	**0.11 J**	**0.048 J**	**0.019 J**	0.01 U	0.016 U	0.015 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.017 U	0.014 U	**0.24 J**	0.1 J	0.032 J	0.013 U	0.021 U	0.019 U
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.025 U	0.02 U	0.11 J	0.043 J	0.021 U	0.02 U	0.03 U	0.029 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.019 U	0.015 U	0.072 J	0.026 J	0.016 U	0.015 U	0.023 U	0.022 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.014 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.016 U	0.016 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.01 U	0.0082 U	0.0089 U	0.0089 U	0.0085 U	0.0081 U	0.012 U	0.012 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.017 U	0.014 U	0.015 U	0.015 U	0.014 U	0.013 U	0.021 U	0.019 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.013 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.016 U	0.015 U
Caprolactam	3100	40000	0.25	mg/kg		0.031 U	0.025 U	0.027 U	0.027 U	0.026 UJ	0.025 U	0.038 U	0.036 U
Carbazole	--	--	--	mg/kg		0.011 U	0.0087 U	0.014 J	0.0094 U	0.009 U	0.0085 U	0.013 U	0.012 U
Chrysene	**16**	290	1.2	mg/kg		0.012 U	0.0095 U	0.15 J	0.07 J	0.023 J	0.0094 U	0.014 U	0.014 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.023 U	0.018 U	0.02 U	0.02 U	0.019 U	0.018 U	0.027 U	0.026 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.016 U	0.015 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.012 U	0.0099 U	0.011 U	0.011 U	0.01 U	0.0098 U	0.015 U	0.032 J

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-121	CFSB-122	CFSB-122
					Sample Date:	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/19/2016	5/19/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-DUP1-SO	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0
Dimethyl phthalate	--	--	--	mg/kg		0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.01 U	0.015 U	0.015 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.013 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 J	0.016 U	0.48 J
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.022 U	0.018 U	0.019 U	0.019 U	0.018 U	0.018 U	0.027 U	0.025 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.013 U	0.01 U	0.17 J	0.07 J	0.029 J	0.01 U	0.016 U	0.015 U
Fluorene	240	3000	0.54	mg/kg		0.0095 U	0.0076 U	0.0082 U	0.0083 U	0.0079 U	0.0075 U	0.011 U	0.011 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.018 U	0.014 U	0.015 U	0.015 U	0.015 U	0.014 U	0.021 U	0.02 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.012 U	0.0098 U	0.011 U	0.011 U	0.01 U	0.0097 U	0.015 U	0.014 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.027 U	0.022 U	0.023 U	0.024 U	0.023 U	0.021 U	0.033 U	0.031 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.016 U	0.013 U	0.014 U	0.014 U	0.013 UJ	0.013 U	0.019 U	0.018 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.029 U	0.023 U	0.11 J	0.043 J	0.024 U	0.023 U	0.035 U	0.033 U
Isophorone	570	2400	0.026	mg/kg		0.0094 U	0.0075 U	0.0081 U	0.0081 U	0.0078 U	0.0074 U	0.011 U	0.011 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.011 U	0.0089 U	0.0096 U	0.0096 U	0.0092 UJ	0.0088 U	0.013 U	0.013 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.014 U	0.011 U	0.012 U	0.012 U	0.011 UJ	0.011 U	0.017 U	0.016 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.015 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.018 U	0.017 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.04 U	0.032 U	0.034 U	0.034 U	0.033 UJ	0.031 U	0.048 U	0.045 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.053 U	0.042 U	0.045 U	0.046 U	0.044 U	0.042 U	0.064 U	0.06 U
Phenanthrene	--	--	--	mg/kg		0.012 U	0.0093 U	0.083 J	0.037 J	0.016 J	0.0092 U	0.014 U	0.013 U
Phenol	1900	25000	0.33	mg/kg		0.014 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.017 U	0.016 U
Pyrene	**180**	2300	1.3	mg/kg		0.02 U	0.016 U	0.17 J	0.069 J	0.029 J	0.016 U	0.024 U	0.023 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-122	CFSB-123	CFSB-123	CFSB-123	CFSB-124	CFSB-124	CFSB-124	CFSB-125
			Sample Date:		5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/18/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.036 U	0.038 U	0.03 U	0.038 U	0.037 U	0.03 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.032 U	0.033 U	0.026 U	0.033 U	0.032 U	0.026 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.098 U	0.11 U	0.12 U	0.094 U	0.12 U	0.11 U	0.094 U	0.099 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.018 U	0.019 U	0.014 U	0.018 U	0.018 U	0.014 U	0.015 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.04 U	0.042 U	0.033 U	0.042 U	0.04 U	0.033 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.042 U	0.045 U	0.035 U	0.044 U	0.043 U	0.035 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.012 U	0.013 U	0.01 U	0.013 U	0.012 U	0.01 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0086 U	0.01 U	0.011 U	0.0083 U	0.011 U	0.01 U	0.0083 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.08 U	0.094 U	0.099 U	0.077 U	0.098 U	0.095 U	0.077 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.32 U	0.34 U	0.26 U	0.34 U	0.33 U	0.27 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.017 U	0.018 U	0.014 U	0.018 U	0.017 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.023 U	0.024 U	0.019 U	0.024 U	0.023 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0083 U	0.0097 U	0.01 U	0.0079 U	0.01 U	0.0098 U	0.008 U	0.0084 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0093 U	0.011 U	0.011 U	0.0089 U	0.011 U	0.011 U	0.0089 U	0.0094 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0081 U	0.0094 U	0.0099 U	0.0077 U	0.0099 U	0.0095 U	0.0078 U	0.0082 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.019 U	0.02 U	0.015 U	0.019 U	0.019 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.014 U	0.015 U	0.012 U	0.015 U	0.014 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.014 U	0.015 U	0.012 U	0.015 U	0.014 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0097 U	0.011 U	0.012 U	0.0093 U	0.012 U	0.011 U	0.0094 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.041 U	0.048 U	0.05 U	0.039 U	0.05 U	0.048 U	0.039 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.013 U	0.013 U	0.01 U	0.013 U	0.013 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.098 U	0.11 U	0.12 U	0.093 U	0.12 U	0.11 U	0.094 U	0.099 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.013 U	0.014 U	0.011 U	0.014 U	0.014 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.018 U	0.019 U	0.015 U	0.019 U	0.018 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0094 U	0.011 U	0.012 U	0.009 U	0.011 U	0.011 U	0.0091 U	0.0095 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.013 U	0.013 U	0.01 U	0.013 U	0.013 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.016 U	0.017 U	0.013 U	0.017 U	0.016 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.21 U	0.22 U	0.17 U	0.21 U	0.21 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0089 U	0.01 U	0.011 U	0.0085 U	0.011 U	0.01 U	0.0085 U	0.0089 U
Acenaphthylene	--	--	--	mg/kg	0.0094 U	0.011 U	0.012 U	0.009 U	0.011 U	0.011 U	0.0091 U	0.0095 U
Acetophenone	780	12000	0.058	mg/kg	0.008 U	0.0093 U	0.0098 U	0.0076 U	0.0097 U	0.0094 U	0.0077 U	0.0081 U
Anthracene	1800	23000	5.8	mg/kg	0.035 U	0.041 U	0.043 U	0.033 U	0.042 U	0.041 U	0.033 U	0.035 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.019 U	0.02 U	0.016 U	0.02 U	0.019 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.033 U	0.034 U	0.027 U	0.034 U	0.033 U	0.027 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.031 U	0.036 U	0.038 U	0.029 U	0.037 J	0.036 U	0.029 U	0.044
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	0.014 J	0.014 U	0.011 U	**0.028 J**	0.015 J	0.011 U	**0.051**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.014 U	0.032 J	0.018 U	0.014 U	0.063	0.031 J	0.014 U	0.1
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.021 U	0.025 U	0.026 U	0.02 U	0.037 J+	0.025 U	0.02 U	0.074 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.016 U	0.019 U	0.02 U	0.015 U	0.028 J	0.019 U	0.015 U	0.035 J
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.013 U	0.014 U	0.011 U	0.014 U	0.013 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0086 U	0.01 U	0.011 U	0.0083 U	0.011 U	0.01 U	0.0083 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.017 U	0.018 U	0.014 U	0.017 U	0.017 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.013 U	0.014 U	0.011 U	0.014 U	0.013 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.031 U	0.032 U	0.025 U	0.032 U	0.031 U	0.025 U	0.027 U
Carbazole	--	--	--	mg/kg	0.0091 U	0.011 U	0.011 U	0.0087 U	0.011 U	0.011 U	0.0087 U	0.0092 U
Chrysene	**16**	290	1.2	mg/kg	0.01 U	0.02 J	0.014 J	0.0095 U	0.048 J	0.02 J	0.0096 U	0.065 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.019 U	0.022 U	0.023 U	0.018 U	0.023 U	0.022 U	0.018 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.013 U	0.014 U	0.011 U	0.014 U	0.013 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.012 U	0.013 U	0.01 U	0.013 U	0.012 U	0.01 U	0.011 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-122	CFSB-123	CFSB-123	CFSB-123	CFSB-124	CFSB-124	CFSB-124	CFSB-125
					Sample Date:	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/18/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.012 U	0.013 U	0.01 U	0.013 U	0.012 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.013 U	0.013 U	0.01 U	0.013 U	0.013 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.022 U	0.023 U	0.018 U	0.023 U	0.022 U	0.018 U	0.019 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.011 U	0.019 J	0.013 U	0.01 U	0.043 J	0.018 J	0.01 U	0.065 J
Fluorene	240	3000	0.54	mg/kg		0.008 U	0.0093 U	0.0098 U	0.0076 U	0.0097 U	0.0094 U	0.0077 U	0.0081 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.017 U	0.018 U	0.014 U	0.018 U	0.017 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.012 U	0.013 U	0.0098 U	0.013 U	0.012 U	0.0099 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 U	0.027 U	0.028 U	0.022 U	0.028 U	0.027 U	0.022 U	0.023 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.016 U	0.016 U	0.013 U	0.016 U	0.016 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.024 U	0.028 U	0.03 U	0.023 U	0.033 J	0.029 U	0.023 U	0.082
Isophorone	570	2400	0.026	mg/kg		0.0079 U	0.0092 U	0.0097 U	0.0075 U	0.0096 U	0.0092 U	0.0076 U	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0093 U	0.011 U	0.011 U	0.0089 U	0.011 U	0.011 U	0.0089 U	0.0094 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.013 U	0.014 U	0.011 U	0.014 U	0.014 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.014 U	0.015 U	0.012 U	0.015 U	0.014 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.033 U	0.039 U	0.041 U	0.032 U	0.041 U	0.039 U	0.032 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.044 U	0.052 U	0.054 U	0.042 U	0.054 U	0.052 U	0.043 U	0.045 U
Phenanthrene	--	--	--	mg/kg		0.0097 U	0.015 J	0.012 U	0.0093 U	0.028 J	0.013 J	0.0094 U	0.031 J
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.014 U	0.015 U	0.011 U	0.015 U	0.014 U	0.012 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.017 U	0.02 J	0.02 U	0.016 U	0.044 J	0.022 J	0.016 U	0.067 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127	CFSB-127	CFSB-127
					Sample Date:	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.031 U	0.03 U	0.037 U	0.032 U	0.03 U	0.032 U	0.031 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.027 U	0.026 U	0.032 U	0.028 U	0.026 U	0.028 U	0.027 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.096 U	0.094 U	0.11 U	0.099 U	0.094 U	0.1 U	0.098 U	0.096 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.015 UJ	0.015 UJ	0.018 UJ	0.015 UJ	0.014 UJ	0.016 U	0.015 U	0.015 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.034 U	0.033 U	0.04 U	0.035 U	0.033 U	0.036 U	0.034 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.036 U	0.035 U	0.043 U	0.037 U	0.035 U	0.038 U	0.036 U	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0085 U	0.0083 U	0.01 U	0.0088 U	0.0083 U	0.0089 U	0.0086 U	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.079 U	0.078 U	0.094 U	0.082 U	0.077 U	0.083 U	0.08 U	0.079 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.27 U	0.27 U	0.32 U	0.28 U	0.27 U	0.29 U	0.28 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.014 U	0.014 U	0.017 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.019 U	0.019 U	0.023 U	0.02 U	0.019 U	0.02 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0081 U	0.008 U	0.0097 U	0.0084 U	0.008 U	0.0086 U	0.0083 U	0.0081 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0091 U	0.009 U	0.011 U	0.0094 U	0.0089 U	0.0096 U	0.0093 U	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0079 U	0.0078 U	0.0095 U	0.0082 U	0.0078 U	0.0083 U	0.0081 U	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg		0.016 U	0.015 U	0.019 U	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg		0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.0095 U	0.0094 U	0.011 U	0.0099 U	0.0094 U	0.01 U	0.0097 U	0.0095 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.04 U	0.039 U	0.048 U	0.041 U	0.039 U	0.042 U	0.041 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg		0.011 U	0.01 U	0.013 U	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.096 U	0.094 U	0.11 U	0.099 U	0.094 U	0.1 U	0.097 U	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.015 U	0.015 U	0.018 U	0.016 U	0.015 U	0.016 U	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0092 U	0.0091 U	0.011 U	0.0095 U	0.009 U	0.0097 U	0.0094 U	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.014 U	0.013 U	0.016 U	0.014 U	0.013 U	0.014 U	0.014 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg		0.17 U	0.17 UJ	0.21 U	0.18 U	0.17 UJ	0.18 U	0.18 U	0.17 UJ
Acenaphthene	360	4500	0.55	mg/kg		0.0087 U	0.0085 U	0.01 U	0.009 U	0.0085 U	0.0091 U	0.0088 U	0.0087 U
Acenaphthylene	--	--	--	mg/kg		0.0092 U	0.0091 U	0.011 U	0.0095 U	0.009 U	0.0097 U	0.0094 U	0.0092 U
Acetophenone	780	12000	0.058	mg/kg		0.0078 U	0.0077 U	0.0093 U	0.0081 U	0.0077 U	0.0082 U	0.0079 U	0.0078 U
Anthracene	1800	23000	5.8	mg/kg		0.034 U	0.033 U	0.041 U	0.035 U	0.033 U	0.036 U	0.035 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg		0.016 U	0.016 U	0.019 U	0.017 U	0.016 U	0.017 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg		0.027 U	0.027 U	0.033 U	0.028 U	0.027 U	0.029 U	0.028 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.03 U	0.029 U	0.036 U	0.031 U	0.029 U	0.032 U	0.03 U	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		0.013 J	0.011 U	**0.023 J**	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.026 J	0.014 U	0.049	0.014 U	0.014 U	0.02 J	0.014 U	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.022 J	0.02 U	0.025 U	0.021 U	0.02 U	0.022 U	0.021 U	0.021 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.016 U	0.015 U	0.019 U	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0085 U	0.0083 U	0.01 U	0.0088 U	0.0083 U	0.0089 U	0.0086 U	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.014 U	0.014 U	0.017 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg		0.026 U	0.025 U	0.031 U	0.027 U	0.025 U	0.027 U	0.026 U	0.026 U
Carbazole	--	--	--	mg/kg		0.0089 U	0.0087 U	0.011 U	0.0092 U	0.0087 U	0.0094 U	0.009 U	0.0089 U
Chrysene	**16**	290	1.2	mg/kg		0.014 J	0.0096 U	0.031 J	0.01 U	0.0096 U	0.013 J	0.0099 U	0.0097 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.019 U	0.018 U	0.022 U	0.019 U	0.018 U	0.02 U	0.019 U	0.019 U
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127	CFSB-127	CFSB-127
					Sample Date:	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.011 U	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.018 U	0.018 U	0.022 U	0.019 U	0.018 U	0.019 U	0.019 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.013 J	0.01 U	0.034 J	0.011 U	0.01 U	0.016 J	0.011 U	0.011 U
Fluorene	240	3000	0.54	mg/kg		0.0078 U	0.0077 U	0.0093 U	0.0081 U	0.0077 U	0.0082 U	0.0079 U	0.0078 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.014 U	0.017 U	0.015 U	0.014 U	0.015 U	0.015 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.0099 U	0.012 U	0.01 U	0.0099 U	0.011 U	0.01 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.022 U	0.022 U	0.027 U	0.023 U	0.022 U	0.024 U	0.023 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.016 U	0.014 U	0.013 U	0.014 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.024 U	0.023 U	0.029 U	0.025 U	0.023 U	0.025 U	0.024 U	0.024 U
Isophorone	570	2400	0.026	mg/kg		0.0077 U	0.0076 U	0.0092 U	0.008 U	0.0076 U	0.0081 U	0.0078 U	0.0077 U
Naphthalene	**3.8**	17	0.00054	mg/kg		0.0091 U	0.009 U	0.011 U	0.0094 U	0.0089 U	0.0096 U	0.0093 U	0.0091 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.033 U	0.032 U	0.039 U	0.034 U	0.032 U	0.034 U	0.033 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.043 U	0.043 U	0.052 U	0.045 U	0.043 U	0.046 U	0.044 U	0.043 U
Phenanthrene	--	--	--	mg/kg		0.0095 U	0.0094 U	0.015 J	0.0099 U	0.0094 U	0.01 U	0.0097 U	0.0095 U
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.014 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U
Pyrene	**180**	2300	1.3	mg/kg		0.016 U	0.016 U	0.033 J	0.017 U	0.016 U	0.017 U	0.017 U	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-128	CFSB-128	CFSB-128	CFSB-129	CFSB-129	CFSB-129	CFSB-130	CFSB-130
			Sample Date:		5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	6/17/2016	6/17/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:		CFSB-128-SO-0-0.5	CFSB-128-SO-0.5-2.0	CFSB-128-SO-10-12	CFSB-129-SO-0-0.5	CFSB-129-SO-0.5-2.0	CFSB-129-SO-10-12	CFSB-130-SO-0.5-2	CFSB-130-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.031 U	0.029 U	0.03 U	0.029 U	0.029 U	0.03 U	0.27 J
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.027 U	0.025 U	0.026 U	0.026 U	0.025 U	0.026 U	0.13 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.098 U	0.098 U	0.091 U	0.095 U	0.092 U	0.091 U	0.093 U	0.48 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.075 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.034 U	0.032 U	0.033 U	0.032 U	0.032 U	NA	0.17 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.036 U	0.034 U	0.035 U	0.034 U	0.034 U	NA	0.18 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U	0.0097 U	0.01 U	0.0098 U	0.0097 U	NA	0.052 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0086 U	0.0086 U	0.0081 U	0.0084 U	0.0081 U	0.0081 U	NA	0.043 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.08 U	0.08 U	0.075 U	0.078 U	0.076 U	0.075 U	NA	0.4 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.28 U	0.26 U	0.27 U	0.26 U	0.26 U	NA	1.4 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.072 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.018 U	0.018 U	0.096 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0083 U	0.0083 U	0.0078 U	0.0081 U	0.0078 U	0.0077 U	0.0079 U	0.041 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0093 U	0.0093 U	0.0087 U	0.009 U	0.0087 U	0.0087 U	NA	0.046 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.06 J	0.0086 J	0.0075 U	0.0087 J	0.021 J	0.0075 U	0.0077 U	0.88 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.015 U	0.016 U	0.015 U	0.015 U	NA	0.079 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.06 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	NA	0.061 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0097 U	0.0097 U	0.0091 U	0.0095 U	0.0091 U	0.0091 U	NA	0.048 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.041 U	0.041 U	0.038 U	0.04 U	0.038 U	0.038 U	0.039 U	0.2 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.054 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.097 U	0.097 U	0.091 U	0.095 U	0.092 U	0.091 U	NA	0.48 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.057 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U	NA	0.078 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0094 U	0.0094 U	0.0088 U	0.0092 U	0.0088 U	0.0088 U	0.0089 U	0.047 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.054 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.069 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.18 U	0.16 U	0.17 U	0.17 U	0.16 U	NA	0.87 U
Acenaphthene	360	4500	0.55	mg/kg	0.27 J	0.073 J	0.0083 U	0.083 J	0.22 J	0.019 J	0.0084 U	4.2
Acenaphthylene	--	--	--	mg/kg	0.012 J	0.0094 U	0.0088 U	0.0092 U	0.0088 U	0.0088 U	0.0089 U	0.059 J
Acetophenone	780	12000	0.058	mg/kg	0.0079 U	0.008 U	0.0074 U	0.0078 U	0.0075 U	0.0074 U	0.0076 U	0.039 U
Anthracene	1800	23000	5.8	mg/kg	0.57	0.15 J	0.032 U	0.16 J	0.43	0.037 J	0.033 U	5.5
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	0.081 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.028 U	0.026 U	0.027 U	0.026 U	0.026 U	0.026 U	0.14 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**2.6**	**0.76**	0.061	**1**	**2.7**	**0.26**	0.029 U	**8**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**3**	**0.91**	**0.062**	**1.3**	**3.4**	**0.34**	0.012 J	**8**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**4**	**1.2**	0.083	**1.6**	**3.8**	**0.41**	0.032 J	**9.4**
Benzo[g,h,i]perylene	--	--	--	mg/kg	3	1.1	0.052 J	1.4	3.7	0.33 J	0.02 U	3.9
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	1.3	0.42	0.034	0.73	**1.7**	0.17	0.015 U	**3.8**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.056 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0086 U	0.0086 U	0.0081 U	0.0084 U	0.0081 U	0.0081 U	0.0082 U	0.043 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.046 J	0.013 U	0.014 U	0.091 J	0.013 U	0.014 U	0.071 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.26 J	0.094 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.056 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.026 U	0.025 U	0.026 U	0.025 U	0.025 U	0.025 UJ	0.13 UJ
Carbazole	--	--	--	mg/kg	0.63	0.16 J	0.0088 J	0.17 J	0.47	0.038 J	0.0086 U	2
Chrysene	**16**	290	1.2	mg/kg	3.6	1.1	0.069 J	1.5	3.6	0.36	0.021 J	7.4
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.75 J+**	**0.27 J+**	0.018 U	**0.34 J+**	**0.88 J+**	**0.07 J+**	0.018 U	**1.1**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.12 J	0.024 J	0.01 U	0.024 J	0.058 J	0.01 U	0.01 U	1.9
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U	0.0097 U	0.01 U	0.0098 U	0.0097 U	0.0099 U	0.052 U

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-128	CFSB-128	CFSB-129	CFSB-129	CFSB-129	CFSB-130	CFSB-130
					Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	6/17/2016	6/17/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12
					Sample Designation:	CFSB-128-SO-0-0.5	CFSB-128-SO-0.5-2.0	CFSB-128-SO-10-12	CFSB-129-SO-0-0.5	CFSB-129-SO-0.5-2.0	CFSB-129-SO-10-12	CFSB-130-SO-0.5-2	CFSB-130-SO-10-12
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.053 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.01 U	0.011 U	0.01 U	0.01 U	0.037 J	0.054 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.019 U	0.017 U	0.018 U	0.017 U	0.017 U	0.018 U	0.092 U
Fluoranthene	**240**	3000	8.9	mg/kg		5.5	1.4	0.092 J	1.8	4.8	0.44	0.029 J	25
Fluorene	240	3000	0.54	mg/kg		0.21 J	0.046 J	0.0086 J	0.048 J	0.13 J	0.011 J	0.0076 U	3.7
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.073 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.01 U	0.01 U	0.0096 U	0.01 U	0.0097 U	0.0096 U	0.0098 U	0.051 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 UJ	0.023 UJ	0.021 UJ	0.022 UJ	0.021 UJ	0.021 UJ	0.022 U	0.11 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.066 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		**2.8 J+**	**1.1 J+**	0.052 J+	**1.3 J+**	**3.5 J+**	**0.31 J+**	0.023 U	**5**
Isophorone	570	2400	0.026	mg/kg		0.0078 U	0.0078 U	0.0073 U	0.0076 U	0.0074 U	0.0073 U	3	2.1
Naphthalene	**3.8**	17	0.00054	mg/kg		0.19 J	0.019 J	0.0087 U	0.014 J	0.031 J	0.0087 U	0.0088 U	1.9
Nitrobenzene	5.1	22	0.000092	mg/kg		0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.057 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.061 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.033 U	0.033 U	0.031 U	0.032 U	0.031 U	0.031 U	0.031 U	0.16 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.044 U	0.044 U	0.041 U	0.043 U	0.042 U	0.041 U	NA	0.22 U
Phenanthrene	--	--	--	mg/kg		3.2	0.86	0.069 J	1	2.8	0.24 J	0.016 J	19
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	NA	0.059 U
Pyrene	**180**	2300	1.3	mg/kg		3.9	1.3	0.099 J	1.9	4.6	0.52	0.027 J	14

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-131	CFSB-131	CFSB-131	CFSB-131	CFSB-132	CFSB-132	CFSB-132	CFSB-133
			Sample Date:		6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	18 - 20	22 - 23	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-131-SO-0.5-2	CFSB-131-SO-10-12	CFSB-131-SO-18-20	CFSB-131-SO-22-23	CFSB-132-SO-0-0.5	CFSB-132-SO-0.5-2	CFSB-132-SO-10-12	CFSB-133-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.03 U	1.2 J	0.029 U	0.03 U	0.036 U	0.038 U	0.038 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.027 U	0.25 U	0.025 U	0.026 U	0.032 U	0.033 U	0.033 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.093 U	0.096 U	0.91 U	0.092 U	0.095 U	0.11 U	0.12 U	0.12 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.015 U	0.14 U	0.014 U	0.015 U	0.018 U	0.018 U	0.018 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.034 U	0.32 U	0.032 U	0.033 U	0.04 U	0.041 U	0.041 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.036 U	0.34 U	0.034 U	0.035 U	0.043 U	0.044 U	0.044 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0099 U	0.01 U	0.096 U	0.0097 U	0.01 U	0.012 U	0.013 U	0.013 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0082 U	0.0084 U	0.08 U	0.0081 U	0.0084 U	0.01 U	0.01 U	0.01 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.079 U	0.74 U	0.075 U	0.078 U	0.094 U	0.097 U	0.097 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.27 U	2.6 U	0.26 U	0.27 U	0.32 U	0.33 U	0.33 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.13 U	0.014 U	0.014 U	0.017 U	0.017 U	0.017 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U	0.18 U	0.018 U	0.019 U	0.023 U	0.023 U	0.023 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.0081 U	0.077 U	0.0078 U	0.0081 U	0.0097 U	0.01 U	0.01 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.0091 U	0.086 U	0.0087 U	0.009 U	0.011 U	0.011 U	0.011 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.017 J	0.0096 J	24	0.026 J	0.023 J	0.0094 U	0.0097 U	0.016 J
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.016 U	0.15 U	0.015 U	0.016 U	0.019 U	0.019 U	0.019 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.11 U	0.011 U	0.012 U	0.014 U	0.015 U	0.015 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.11 U	0.012 U	0.012 U	0.014 U	0.015 U	0.015 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0093 U	0.0095 U	0.09 U	0.0091 U	0.0095 U	0.011 U	0.012 U	0.012 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.04 U	0.38 U	0.038 U	0.04 U	0.048 U	0.049 U	0.049 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.011 U	0.1 U	0.01 U	0.011 U	0.013 U	0.013 U	0.013 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.095 U	0.9 U	0.091 U	0.095 U	0.11 U	0.12 U	0.12 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.11 U	0.011 U	0.011 U	0.013 U	0.014 U	0.014 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.015 U	0.15 U	0.015 U	0.015 U	0.018 U	0.019 U	0.019 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.0092 U	0.087 U	0.0088 U	0.0092 U	0.011 U	0.011 U	0.011 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.011 U	0.1 U	0.01 U	0.011 U	0.013 U	0.013 U	0.013 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.014 U	0.13 U	0.013 U	0.013 U	0.016 U	0.017 U	0.017 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	1.6 U	0.16 U	0.17 U	0.21 U	0.21 U	0.21 U
Acenaphthene	360	4500	0.55	mg/kg	0.0084 U	0.0086 U	2.5 J	0.0083 U	0.0086 U	0.01 U	0.011 U	0.011 U
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.0092 U	0.087 U	0.0088 U	0.0092 U	0.011 U	0.011 U	0.011 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0078 U	0.074 U	0.0075 U	0.0078 U	0.0093 U	0.0096 U	0.0096 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.034 U	7.1	0.033 U	0.034 U	0.041 U	0.042 U	0.042 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U	0.15 U	0.015 U	0.016 U	0.019 U	0.02 U	0.02 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.027 U	0.26 U	0.026 U	0.027 U	0.033 U	0.034 U	0.034 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.039	0.03 U	**3.2**	0.029 U	0.03 U	0.036 U	0.037 U	0.037 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.032 J**	0.012 J	**2.1**	0.01 U	0.011 U	0.013 U	0.013 U	0.013 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.049	0.03 J	**1.7**	0.013 U	0.014 U	0.017 U	0.017 U	0.017 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.022 J	0.021 U	0.74 J	0.02 U	0.02 U	0.025 U	0.025 U	0.025 U
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.018 J	0.016 U	0.15 U	0.015 U	0.016 U	0.019 U	0.019 U	0.019 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.11 U	0.011 U	0.011 U	0.013 U	0.014 U	0.014 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0082 U	0.0084 U	0.08 U	0.0081 U	0.0084 U	0.01 U	0.01 U	0.01 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U	0.13 U	0.013 U	0.016 J	0.017 U	0.017 U	0.017 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.1 U	0.011 U	0.011 U	0.013 U	0.014 U	0.014 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 UJ	0.026 UJ	0.24 U	0.025 UJ	0.026 U	0.031 U	0.032 U	0.032 U
Carbazole	--	--	--	mg/kg	0.0087 U	0.0089 U	0.084 U	0.0085 U	0.0088 U	0.011 U	0.011 U	0.011 U
Chrysene	**16**	290	1.2	mg/kg	0.056 J	0.025 J	7.5	0.0093 U	0.0097 U	0.012 U	0.012 U	0.012 U
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.019 U	**0.22 J**	0.018 U	0.019 U	0.022 U	0.023 U	0.023 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.011 U	0.1 U	0.01 U	0.011 U	0.013 U	0.013 U	0.013 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0099 U	0.01 U	0.096 U	0.0097 U	0.01 U	0.012 U	0.013 U	0.013 U

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-131	CFSB-131	CFSB-131	CFSB-131	CFSB-132	CFSB-132	CFSB-132	CFSB-133
				Sample Date:	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	18 - 20	22 - 23	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-131-SO-0.5-2	CFSB-131-SO-10-12	CFSB-131-SO-18-20	CFSB-131-SO-22-23	CFSB-132-SO-0-0.5	CFSB-132-SO-0.5-2	CFSB-132-SO-10-12	CFSB-133-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.01 U	0.098 U	0.01 U	0.01 U	0.012 U	0.013 U	0.013 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.024 J	0.011 U	0.1 U	0.01 U	0.011 U	0.013 U	0.013 U	0.013 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.018 U	0.2 J	0.017 U	0.018 U	0.022 U	0.022 U	0.022 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.073 J	0.026 J	3.3 J	0.01 U	0.011 U	0.013 U	0.013 U	0.013 U
Fluorene	240	3000	0.54	mg/kg	0.0076 U	0.0078 U	7.4	0.0075 U	0.0078 U	0.0093 U	0.0096 U	0.0096 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.014 U	0.14 U	0.014 U	0.014 U	0.017 U	0.018 U	0.018 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0098 U	0.01 U	0.095 U	0.0096 U	0.01 U	0.012 U	0.012 U	0.012 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.022 U	0.21 U	0.021 U	0.022 U	0.027 U	0.027 U	0.027 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U	0.12 U	0.013 U	0.013 U	0.016 U	0.016 U	0.016 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.023 U	0.024 U	**0.3 J**	0.023 U	0.024 U	0.028 U	0.029 U	0.029 U
Isophorone	570	2400	0.026	mg/kg	0.81	1.7	0.073 U	0.0074 U	0.0076 U	0.0092 U	0.0095 U	0.0095 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0089 U	0.0091 U	**9.2**	0.022 J	0.01 J	0.011 U	0.011 U	0.011 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U	0.11 U	0.011 U	0.011 U	0.013 U	0.014 U	0.014 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.11 U	0.012 U	0.012 U	0.014 U	0.015 U	0.015 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.032 U	0.31 U	0.031 U	0.032 U	0.039 U	0.04 U	0.04 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 U	0.043 U	0.41 U	0.041 U	0.043 U	0.052 U	0.053 U	0.053 U
Phenanthrene	--	--	--	mg/kg	0.07 J	0.015 J	26	0.0091 U	0.0095 U	0.011 U	0.012 U	0.012 U
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.012 U	0.11 U	0.011 U	0.012 U	0.014 U	0.014 U	0.014 U
Pyrene	**180**	2300	1.3	mg/kg	0.083 J	0.028 J	11	0.016 U	0.016 U	0.019 U	0.02 U	0.02 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-133	CFSDP-001	CFSDP-002	CFSDP-007	CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011	CFSDP-012
					Sample Date:	6/3/2016	08 Sep 2016	08 Sep 2016	08 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
					Sample Designation:	CFSB-133-SO-0.5-2	CFSDP-001-SO	CFSDP-002-SO	CFSDP-007-SO	CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO	CFSDP-012-SO
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.037 U	0.038 U	0.034 U	0.039 U	0.04 U	0.034 U	0.039 U	0.034 U	0.037 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.032 U	0.034 U	0.03 U	0.034 U	0.035 U	0.029 U	0.034 U	0.03 U	0.032 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.12 U	0.12 U	0.11 U	0.12 U	0.13 U	0.11 U	0.12 U	0.11 U	0.11 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.018 U	0.019 U	0.016 U	0.019 U	0.019 U	0.016 U	0.019 U	0.017 U	0.018 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.041 U	0.042 U	0.038 U	0.043 U	0.044 U	0.037 U	0.043 U	0.038 U	0.04 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.043 U	0.045 U	0.04 U	0.045 U	0.047 U	0.039 U	0.046 U	0.04 U	0.043 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.012 U	0.013 U	0.011 U	0.013 U	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.01 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0093 U	0.011 U	0.0095 U	0.01 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.095 U	0.099 U	0.088 U	0.1 U	0.1 U	0.087 U	0.1 U	0.089 U	0.095 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.33 U	0.34 U	0.3 U	0.34 U	0.36 U	0.3 UJ	0.35 U	0.31 U	0.33 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.017 U	0.018 U	0.016 U	0.018 U	0.019 U	0.016 U	0.018 U	0.016 U	0.017 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.023 U	0.024 U	0.021 U	0.024 U	0.025 U	0.021 U	0.024 U	0.021 U	0.023 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0098 U	0.01 U	0.009 U	0.01 U	0.011 U	0.009 U	0.01 U	0.0092 U	0.0098 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.011 U	0.011 U	0.01 U	0.012 U	0.012 U	0.01 U	0.012 U	0.01 U	0.011 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.013 J	0.0099 U	0.0088 U	0.01 U	0.01 U	0.0087 U	0.01 U	0.012 J	0.0095 U
2-Methylphenol	320	4100	0.075	mg/kg		0.019 U	0.02 U	0.017 U	0.02 U	0.02 U	0.017 U	0.02 U	0.018 U	0.019 U
2-Nitroaniline	63	800	0.008	mg/kg		0.014 U	0.015 U	0.013 U	0.015 U	0.015 U	0.013 U	0.015 U	0.013 U	0.014 U
2-Nitrophenol	--	--	--	mg/kg		0.015 U	0.015 U	0.013 U	0.015 U	0.016 U	0.013 U	0.015 U	0.014 U	0.014 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.012 U	0.012 U	0.011 U	0.012 U	0.035 J	0.011 U	0.012 U	0.011 U	0.011 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.048 U	0.05 U	0.045 U	0.051 U	0.052 U	0.044 U	0.051 U	0.045 U	0.048 U
3-Nitroaniline	--	--	--	mg/kg		0.013 U	0.013 U	0.012 U	0.013 U	0.014 U	0.012 U	0.014 U	0.012 U	0.013 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.12 U	0.12 U	0.11 U	0.12 U	0.13 U	0.11 U	0.12 U	0.11 U	0.11 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.014 U	0.014 U	0.013 U	0.014 U	0.015 U	0.012 U	0.014 U	0.013 U	0.014 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.019 U	0.019 U	0.017 U	0.019 U	0.02 U	0.017 U	0.02 U	0.017 U	0.018 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.011 U	0.012 U	0.01 U	0.012 U	0.012 U	0.01 U	0.012 U	0.01 U	0.011 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.013 U	0.013 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.012 U	0.013 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.016 U	0.017 U	0.015 U	0.017 U	0.018 U	0.015 U	0.017 U	0.015 U	0.016 U
4-Nitrophenol	--	--	--	mg/kg		0.21 U	0.22 U	0.19 U	0.22 U	0.23 U	0.19 UJ	0.22 U	0.19 U	0.21 U
Acenaphthene	360	4500	0.55	mg/kg		0.01 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.0096 U	0.043 J	0.075 J	0.046 J
Acenaphthylene	--	--	--	mg/kg		0.011 U	0.012 U	0.01 U	0.012 U	0.012 U	0.01 U	0.012 U	0.01 U	0.011 U
Acetophenone	780	12000	0.058	mg/kg		0.0094 U	0.0098 U	0.0087 U	0.0099 U	0.01 U	0.0086 U	0.011 J	0.0088 U	0.0094 U
Anthracene	1800	23000	5.8	mg/kg		0.041 U	0.043 U	0.038 U	0.043 U	0.045 U	0.038 U	0.082 J	0.14 J	0.096 J
Atrazine	2.4	10	0.0002	mg/kg		0.019 U	0.02 U	0.018 U	0.02 U	0.021 U	0.018 U	0.02 U	0.018 U	0.019 U
Benzaldehyde	170	820	0.0041	mg/kg		0.033 U	0.034 U	0.03 U	0.035 U	0.036 U	0.03 U	0.069 J	0.031 U	0.033 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.036 U	0.038 U	0.033 U	0.038 U	0.039 U	0.1	**0.82**	**0.74**	**0.64**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		0.013 U	0.014 U	0.012 U	0.014 U	0.014 U	**0.12**	**1.1**	**0.94**	**0.83**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		0.017 U	0.018 U	0.016 U	0.018 U	0.018 U	**0.21**	**1.8**	**1.3**	**1.2**
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.025 U	0.026 U	0.023 U	0.026 U	0.027 U	0.11 J	1.3	0.84	0.77
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.019 U	0.02 U	0.017 U	0.02 U	0.02 U	0.069	0.47	0.49	0.45
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.014 U	0.014 U	0.012 U	0.014 U	0.015 U	0.012 U	0.014 U	0.013 U	0.013 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.01 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0093 U	0.011 U	0.0095 U	0.01 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.017 U	0.032 J	0.016 U	0.018 J	0.018 U	0.015 U	0.018 U	0.016 U	0.045 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.013 U	0.014 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.012 U	0.031 J
Caprolactam	3100	40000	0.25	mg/kg		0.031 U	0.032 U	0.029 U	0.033 U	0.034 U	0.028 UJ	0.033 U	0.029 U	0.031 U
Carbazole	--	--	--	mg/kg		0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.011 J	0.1 J	0.1 J	0.1 J
Chrysene	**16**	290	1.2	mg/kg		0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.14 J	1.1	0.93	0.89
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.023 U	0.023 U	0.021 U	0.024 U	0.024 U	0.021 U	**0.28**	**0.16**	**0.2**
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.013 U	0.014 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.024 J	0.015 J
Diethyl phthalate	5100	66000	0.61	mg/kg		0.012 U	0.013 U	0.011 U	0.013 U	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U

Preliminary - Under EPA and IDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-133	CFSDP-001	CFSDP-002	CFSDP-007	CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011	CFSDP-012
					Sample Date:	6/3/2016	08 Sep 2016	08 Sep 2016	08 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
					Sample Designation:	CFSB-133-SO-0.5-2	CFSDP-001-SO	CFSDP-002-SO	CFSDP-007-SO	CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO	CFSDP-012-SO
Dimethyl phthalate	--	--	--	mg/kg		0.013 U	0.013 U	0.012 U	0.013 U	0.014 U	0.011 U	0.013 U	0.012 U	0.012 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.013 U	0.013 U	0.012 U	0.014 U	0.014 U	0.012 U	0.014 U	0.012 U	0.039 J
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.022 U	0.023 U	0.02 U	0.023 U	0.024 U	0.02 U	0.023 U	0.02 U	0.022 U
Fluoranthene	**240**	3000	8.9	mg/kg		0.013 U	0.013 U	0.012 U	0.013 U	0.014 U	0.13 J	1.1	1.1	1
Fluorene	240	3000	0.54	mg/kg		0.0094 U	0.0098 U	0.0087 U	0.0099 U	0.01 U	0.0086 U	0.028 J	0.053 J	0.03 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.018 U	0.018 U	0.016 U	0.018 U	0.019 U	0.016 U	0.019 U	0.016 U	0.017 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.012 U	0.013 U	0.011 U	0.013 U	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.027 U	0.028 U	0.025 U	0.028 U	0.029 U	0.025 U	0.029 U	0.025 U	0.027 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.016 U	0.016 U	0.015 U	0.017 U	0.017 U	0.014 U	0.017 U	0.015 U	0.016 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.029 U	0.03 U	0.027 U	0.03 U	0.031 U	0.12	**1.3**	**0.95**	**0.87**
Isophorone	570	2400	0.026	mg/kg		0.0093 U	0.0097 U	0.0086 U	0.0097 U	0.01 U	0.0085 U	0.014 J	0.012 J	0.014 J
Naphthalene	**3.8**	17	0.00054	mg/kg		0.011 U	0.011 U	0.01 U	0.012 U	0.012 U	0.01 U	0.013 J	0.02 J	0.013 J
Nitrobenzene	5.1	22	0.000092	mg/kg		0.014 U	0.014 U	0.013 U	0.014 U	0.015 U	0.012 U	0.014 U	0.013 U	0.014 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.015 U	0.015 U	0.013 U	0.015 U	0.016 U	0.013 U	0.015 U	0.014 U	0.014 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.039 U	0.041 U	0.036 U	0.041 U	0.043 U	0.036 U	0.042 U	0.037 U	0.039 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.052 U	0.055 U	0.048 U	0.055 U	0.057 U	0.048 U	0.055 U	0.049 U	0.052 U
Phenanthrene	--	--	--	mg/kg		0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.065 J	0.53	0.69	0.55
Phenol	1900	25000	0.33	mg/kg		0.014 U	0.015 U	0.013 U	0.015 U	0.015 U	0.013 U	0.015 U	0.013 U	0.014 U
Pyrene	**180**	2300	1.3	mg/kg		0.02 U	0.02 U	0.018 U	0.021 U	0.021 U	0.19 J	1.5	1.4	1.1

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and IDEQ Review

Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSDP-012	CFSDP-013	CFSDP-017	CFSDP-021	CFSDP-022
			Sample Date:		06 Sep 2016	06 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:		CFSDP-DUP1-SO	CFSDP-013-SO	CFSDP-017-SO	CFSDP-021-SO	CFSDP-022-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units					
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.036 U	0.051 U	0.038 U	0.032 U	0.045 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.032 U	0.044 U	0.033 U	0.028 U	0.039 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.11 U	0.16 U	0.12 U	0.1 U	0.14 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.018 U	0.025 U	0.018 U	0.016 U	0.022 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.04 U	0.056 UJ	0.042 U	0.036 U	0.049 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.042 U	0.059 UJ	0.044 U	0.038 U	0.052 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.012 U	0.017 UJ	0.013 U	0.011 U	0.015 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.01 U	0.014 UJ	0.011 U	0.009 U	0.012 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.094 U	0.13 UJ	0.098 U	0.083 U	0.12 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.32 U	0.45 R	0.34 U	0.29 UJ	0.4 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.017 U	0.024 UJ	0.018 U	0.015 U	0.021 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.023 U	0.032 UJ	0.024 U	0.02 U	0.028 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0097 U	0.014 UJ	0.01 U	0.0086 U	0.012 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.011 U	0.015 UJ	0.011 U	0.0096 U	0.013 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0094 U	0.013 UJ	0.0098 U	0.0084 U	0.012 U
2-Methylphenol	320	4100	0.075	mg/kg	0.019 U	0.026 UJ	0.019 U	0.017 U	0.023 U
2-Nitroaniline	63	800	0.008	mg/kg	0.014 U	0.02 U	0.015 U	0.013 U	0.017 U
2-Nitrophenol	--	--	--	mg/kg	0.014 U	0.02 UJ	0.015 U	0.013 U	0.018 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.011 U	0.016 UJ	0.012 U	0.01 U	0.014 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.048 U	0.067 UJ	0.05 U	0.042 U	0.058 U
3-Nitroaniline	--	--	--	mg/kg	0.013 U	0.018 U	0.013 U	0.011 U	0.016 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.11 U	0.16 UJ	0.12 U	0.1 U	0.14 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.013 U	0.019 U	0.014 U	0.012 U	0.016 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.018 U	0.026 UJ	0.019 U	0.016 U	0.023 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.011 U	0.015 U	0.011 U	0.0098 U	0.013 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.013 U	0.018 UJ	0.013 U	0.011 U	0.016 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.016 U	0.023 UJ	0.017 U	0.014 U	0.02 U
4-Nitrophenol	--	--	--	mg/kg	0.2 U	0.29 UJ	0.21 U	0.18 UJ	0.25 UJ
Acenaphthene	360	4500	0.55	mg/kg	0.037 J	0.014 UJ	0.011 U	0.0092 U	0.013 U
Acenaphthylene	--	--	--	mg/kg	0.011 U	0.015 UJ	0.011 U	0.0098 U	0.013 U
Acetophenone	780	12000	0.058	mg/kg	0.0093 U	0.013 U	0.0097 U	0.0083 U	0.011 U
Anthracene	1800	23000	5.8	mg/kg	0.083 J	0.057 UJ	0.042 U	0.036 U	0.05 U
Atrazine	2.4	10	0.0002	mg/kg	0.019 U	0.027 U	0.02 U	0.017 U	0.023 U
Benzaldehyde	170	820	0.0041	mg/kg	0.032 U	0.046 UJ	0.034 U	0.029 U	0.04 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.55**	0.093 J-	0.037 U	0.032 U	0.074
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.74**	**0.11 J-**	0.013 U	**0.021 J**	**0.091**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**1.1**	**0.19 J-**	0.017 U	0.036 J	0.15
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.69	0.13 J	0.026 U	0.027 J	0.1 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.45	0.051 J-	0.019 U	0.017 U	0.053
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.013 U	0.019 UJ	0.014 U	0.012 U	0.016 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.01 U	0.014 UJ	0.011 U	0.009 U	0.012 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.031 J	0.023 U	0.017 U	0.015 U	0.02 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.027 J	0.018 U	0.014 U	0.012 U	0.016 U
Caprolactam	3100	40000	0.25	mg/kg	0.031 U	0.043 UJ	0.032 U	0.027 UJ	0.038 U
Carbazole	--	--	--	mg/kg	0.091 J	0.017 J-	0.011 U	0.0094 U	0.013 U
Chrysene	**16**	290	1.2	mg/kg	0.82	0.13 J-	0.012 U	0.019 J	0.13 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.15**	0.031 U	0.023 U	0.02 U	0.027 U
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.014 J	0.018 UJ	0.013 U	0.011 U	0.016 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.012 U	0.017 UJ	0.013 U	0.011 U	0.015 U

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Table L2. Semivolatile Organic Compounds in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-012	CFSDP-013	CFSDP-017	CFSDP-021	CFSDP-022
				Sample Date:	06 Sep 2016	06 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016
				Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
				Sample Designation:	CFSDP-DUP1-SO	CFSDP-013-SO	CFSDP-017-SO	CFSDP-021-SO	CFSDP-022-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units					
Dimethyl phthalate	--	--	--	mg/kg	0.012 U	0.017 UJ	0.013 U	0.011 U	0.015 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.018 J	0.018 UJ	0.013 U	0.011 U	0.016 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.022 U	0.03 U	0.023 U	0.019 U	0.027 U
Fluoranthene	**240**	3000	8.9	mg/kg	0.92	0.14 J-	0.013 U	0.018 J	0.12 J
Fluorene	240	3000	0.54	mg/kg	0.024 J	0.013 UJ	0.0097 U	0.0083 U	0.011 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.017 U	0.024 U	0.018 U	0.015 U	0.021 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.012 U	0.017 UJ	0.013 U	0.011 U	0.015 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.027 U	0.037 UJ	0.028 U	0.024 U	0.033 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.016 U	0.022 UJ	0.016 U	0.014 U	0.019 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**0.76**	0.11	0.03 U	0.025 J	0.093
Isophorone	570	2400	0.026	mg/kg	0.011 J	0.016 J-	0.0096 U	0.0081 U	0.015 J
Naphthalene	**3.8**	17	0.00054	mg/kg	0.011 J	0.015 UJ	0.011 U	0.0096 U	0.013 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.013 U	0.019 UJ	0.014 U	0.012 U	0.016 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.014 U	0.02 U	0.015 U	0.013 U	0.018 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.039 U	0.054 U	0.04 U	0.034 U	0.048 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.052 U	0.072 UJ	0.054 U	0.046 U	0.063 U
Phenanthrene	--	--	--	mg/kg	0.49	0.067 J-	0.012 U	0.011 J	0.058 J
Phenol	1900	25000	0.33	mg/kg	0.014 U	0.02 UJ	0.015 U	0.012 U	0.017 U
Pyrene	**180**	2300	1.3	mg/kg	1	0.13 J	0.02 U	0.027 J	0.11 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-002	CFMW-002	CFMW-002	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a
			Sample Date:	6/13/2016	6/13/2016	6/13/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	6/2/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	23 - 28
			Sample Designation:	CFMW-002-SO-0-0.5	CFMW-002-SO-0.5-2	CFMW-002-SO-10-12	CFMW-003a-SO-0-0.5	CFMW-003a-SO-0.5-2	CFMW-003a-SO-10-12	CFMW-DUP9-SO	CFMW-003a-SO-23-28
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**14500**	**24900**	6320	6230	**12700**	5610 J	**10500 J**	6440
Antimony	3.1	47	0.035	mg/kg	0.35 UJ	0.35 UJ	0.32 UJ	0.5 U	0.33 UJ	0.42 U	0.39 UJ	0.49 U
Arsenic	**0.68**	3	0.0015	mg/kg	**5.3**	**6.5**	**3.2**	**4.1**	**4.4**	**4**	**4.7**	**5.5**
Barium	1500	22000	16	mg/kg	127	181	29.5	94.1	74.4	39 J	65.8 J	92.4
Beryllium	**16**	230	1.9	mg/kg	0.78	0.76	0.25 J	0.29 J	0.4	0.22 J	0.39 J	0.23 J
Cadmium	**7.1**	98	0.069	mg/kg	0.26 U	0.26 U	0.25 U	0.38 U	0.25 U	0.32 U	0.3 U	0.37 U
Calcium	--	--	--	mg/kg	68400 J	7360 J	35500 J	75000	28000	53100	64700	36400
Chromium	--	--	--	mg/kg	10.3	12.7	7.5	6.5	10.4	7.1	10.1	6.3
Cobalt	**2.3**	35	0.027	mg/kg	**4.8**	**6.4**	**3.4**	**3.6**	**5.5**	**3.7**	**5.8**	**4.9**
Copper	**310**	4700	2.8	mg/kg	12	14.5	11.9	10.8	15.6	9.4	12.9	9.4
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.48 J	0.59 J	0.076 J	0.066 J-	0.053 J-	0.017 UJ	0.038 J	0.022 J
Iron	**5500**	82000	35	mg/kg	**13400**	**19600**	**9650**	**9890**	**15400**	**10100**	**16100**	**10100**
Lead	400	800	--	mg/kg	13.5 J+	12.2 J+	3.7 J+	8.1	8.4	6.2	10.3	9.9
Magnesium	--	--	--	mg/kg	11500	12100	12400	11800	14100	9140 J	17800 J	9260 J
Manganese	**180**	2600	2.8	mg/kg	**616 J**	**728 J**	**270 J**	**284**	**416**	**316**	**521**	**325**
Mercury	1.1	4.6	0.0033	mg/kg	0.014 J	0.013 U	0.019	0.055	0.023	0.024	0.029	0.021
Nickel	**150**	2200	2.6	mg/kg	28.5 J+	15.5 J+	7.3 J+	7.8	12.4	7.3	11.1	7.5
Potassium	--	--	--	mg/kg	1280	1220	628	464	976	551 J	1150 J	636
Selenium	39	580	0.052	mg/kg	0.33 U	0.33 U	0.3 U	0.47 U	0.31 U	0.4 U	0.37 U	0.46 U
Silver	39	580	0.08	mg/kg	0.64 U	0.64 U	0.59 U	0.91 U	0.61 U	0.77 U	0.72 U	0.9 U
Sodium	--	--	--	mg/kg	104	279	37 J	80.6 J	36.1 J	39.4 U	36.9 U	230
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	**0.13 J**	0.12 U	0.19 U	0.13 U	0.16 U	0.15 U	0.19 U
Vanadium	**39**	580	8.6	mg/kg	21.1 J-	23.1 J-	4.4 J-	4.6	8.8	4.6	7.7	5.6
Zinc	2300	35000	37	mg/kg	114 J-	111 J-	40.3 J-	41.3	45.4	23.4 J	47.9 J	28.2

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-010	CFMW-010
					Sample Date:	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	5/18/2016	5/18/2016
					Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	10 - 12	88 - 93	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-008a-SO-0-0.5	CFMW-008a-SO-0-0.5-Pb	CFMW-008a-SO-0.5-2	CFMW-008a-SO-10-12	CFMW-DUP14-SO	CFMW-008a-SO-88-93	CFMW-010-SO-0-0.5	CFMW-010-SO-0.5-2.0
Aluminum	**7700**	110000	3000	mg/kg	**21000**	NA	**8610**	**10000**	**8380**	NA	**25700**	**22100**
Antimony	3.1	47	0.035	mg/kg	0.36 UJ	NA	0.32 UJ	0.34 UJ	0.32 UJ	NA	0.37 UJ	0.35 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**7.1**	NA	**4**	**7.7**	**6.3**	NA	**6.2**	**7.7**
Barium	1500	22000	16	mg/kg	163	NA	55.6	71.4	70.2	NA	235	171
Beryllium	**16**	230	1.9	mg/kg	0.63	NA	0.27 J	0.4	0.32	NA	0.84	0.78
Cadmium	**7.1**	98	0.069	mg/kg	0.27 U	NA	0.24 U	0.26 U	0.25 U	NA	0.28 U	0.32 J
Calcium	--	--	--	mg/kg	56600 J	NA	26100 J	57600 J	56800 J	NA	4460	2370
Chromium	--	--	--	mg/kg	10	NA	7	8.4	8.2	NA	12.7	12.2
Cobalt	**2.3**	35	0.027	mg/kg	**4.7**	NA	**3.5**	**5**	**3.9**	NA	**6.4**	**6.6**
Copper	**310**	4700	2.8	mg/kg	15.2	NA	8.4	10.8	13	NA	13.7	12
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.088 J	NA	0.016 UJ	0.015 UJ	0.015 UJ	0.017 UJ	1.4	0.32
Iron	**5500**	82000	35	mg/kg	**10800**	NA	**9950**	**13800**	**11500**	NA	**20500**	**19700**
Lead	400	800	--	mg/kg	23.3 J+	21.9	11.2 J+	8.4 J+	7.4 J+	NA	13.5	15.3
Magnesium	--	--	--	mg/kg	8170	NA	8110	15100	11600	NA	10900	11500
Manganese	**180**	2600	2.8	mg/kg	**388 J**	NA	**247 J**	**376 J**	**415 J**	NA	**529**	**577**
Mercury	1.1	4.6	0.0033	mg/kg	0.023	NA	0.016 J	0.015 J	0.017	NA	0.019	0.024
Nickel	**150**	2200	2.6	mg/kg	32.4 J+	NA	15.8 J+	9.8 J+	8.1 J+	NA	22.2	12.9
Potassium	--	--	--	mg/kg	1060	NA	585	576	589	NA	1430	1250
Selenium	39	580	0.052	mg/kg	0.34 J	NA	0.3 U	0.32 U	0.3 U	NA	0.35 U	0.33 U
Silver	39	580	0.08	mg/kg	0.65 U	NA	0.58 U	0.63 U	0.59 U	NA	0.68 U	0.65 U
Sodium	--	--	--	mg/kg	302	NA	89.5	31.9 U	30.3 U	NA	176	119
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	NA	0.12 U	0.13 U	0.12 U	NA	**0.14 J**	**0.15 J**
Vanadium	**39**	580	8.6	mg/kg	17.3 J-	NA	9.5 J-	6.6 J-	5.2 J-	NA	23.7	19.3
Zinc	2300	35000	37	mg/kg	57.1 J-	NA	32.3 J-	37.9 J-	30 J-	NA	72.5	75.7

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Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-010	CFMW-010	CFMW-011a	CFMW-011a	CFMW-011a	CFMW-011a	CFMW-011a	CFMW-011a
					Sample Date:	5/18/2016	5/18/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/29/2016
					Sample Depth (ft-bls):	0 - 0.5	10 - 12	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	31 - 36
					Sample Designation:	CFMW-010-SO-0-0.5-Pb	CFMW-010-SO-10-12	CFMW-Dup18-SO	CFMW-011a-SO-0-0.5	CFMW-011a-SO-0-0.5pb	CFMW-011a-SO-0.5-2	CFMW-011a-SO-10-12	CFMW-011a-SO-31-36
Aluminum	**7700**	110000	3000	mg/kg	NA	5380	**10400**	**15800**	NA	**10000**	**11000**	NA
Antimony	3.1	47	0.035	mg/kg	NA	0.34 UJ	0.47 U	0.49 U	NA	0.47 U	0.33 UJ	NA
Arsenic	**0.68**	3	0.0015	mg/kg	NA	**3.1**	**4.5**	**4.9**	NA	**4.6**	**4.7**	NA
Barium	1500	22000	16	mg/kg	NA	33	63.3	158	NA	61.8	139	NA
Beryllium	**16**	230	1.9	mg/kg	NA	0.2 J	0.58	0.55	NA	0.57	0.4	NA
Cadmium	**7.1**	98	0.069	mg/kg	NA	0.26 U	0.36 U	0.37 U	NA	0.36 U	0.25 U	NA
Calcium	--	--	--	mg/kg	NA	31100	1560	6600	NA	1660	45500	NA
Chromium	--	--	--	mg/kg	NA	6.3	9.7	8.6	NA	9.8	11.3 J-	NA
Cobalt	**2.3**	35	0.027	mg/kg	NA	**3.2**	**8.5**	**6.2**	NA	**8.1**	**5.5 J-**	NA
Copper	**310**	4700	2.8	mg/kg	NA	11.6	11.3	13.4	NA	12.2	11.1 J-	NA
Cyanide, Total	**2.3**	15	0.0015	mg/kg	NA	0.033 J	0.034 J	0.042 J	NA	0.051 J	0.027 J	0.023 J
Iron	**5500**	82000	35	mg/kg	NA	**8950**	**14300**	**14900**	NA	**14500**	**16300**	NA
Lead	400	800	--	mg/kg	45.8	3.8	12.8	11.2	7.9	12.9	7.7 J-	NA
Magnesium	--	--	--	mg/kg	NA	8710	6120	7170	NA	6160	17100	NA
Manganese	**180**	2600	2.8	mg/kg	NA	**277**	**490**	**446**	NA	**475**	**486**	NA
Mercury	1.1	4.6	0.0033	mg/kg	NA	0.018	0.013 U	0.015 U	NA	0.014 U	0.016	NA
Nickel	**150**	2200	2.6	mg/kg	NA	7.4	10.8	12.2	NA	11.2	12.2 J-	NA
Potassium	--	--	--	mg/kg	NA	384	1060	978	NA	1040	1360	NA
Selenium	39	580	0.052	mg/kg	NA	0.32 U	0.44 U	0.46 U	NA	0.44 U	0.31 U	NA
Silver	39	580	0.08	mg/kg	NA	0.62 U	0.86 U	0.9 U	NA	0.87 U	0.61 U	NA
Sodium	--	--	--	mg/kg	NA	61.9 J	44.1 U	168	NA	44.2 U	31 U	NA
Thallium	**0.078**	1.2	0.0014	mg/kg	NA	0.13 U	0.18 U	0.19 U	NA	0.18 U	0.13 U	NA
Vanadium	**39**	580	8.6	mg/kg	NA	3.5	13.2	12.8	NA	12.5	7.9	NA
Zinc	2300	35000	37	mg/kg	NA	25.2	30	40	NA	30.5	39.8	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-016a	CFMW-016a
				Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	6/21/2016	6/21/2016
				Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	68 - 73	0 - 0.5	0 - 0.5
				Sample Designation:	CFMW-012A-SO-0-0.5	CFMW-012A-SO-0-0.5-Pb	CFMW-012A-SO-0.5-2	CFMW-012A-SO-10-12	CFMW-DUP3-SO	CFMW-012A-SO-68-73	CFMW-016a-SO-0-0.5	CFMW-016a-SO-0-0.5-Pb
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**16400**	NA	**13400**	**8090**	**15200**	**8190**	**12600**	NA
Antimony	3.1	47	0.035	mg/kg	0.44 UJ	NA	0.45 UJ	0.42 UJ	0.45 UJ	0.38 UJ	0.41 UJ	NA
Arsenic	**0.68**	3	0.0015	mg/kg	**6.6 J**	NA	**5.7 J**	**5 J**	**5.7 J**	**4.6 J**	**4.8**	NA
Barium	1500	22000	16	mg/kg	131	NA	112	48.3	90	55.5	105 J	NA
Beryllium	**16**	230	1.9	mg/kg	0.6	NA	0.46	0.33 J	0.46	0.3 J	0.61	NA
Cadmium	**7.1**	98	0.069	mg/kg	0.33 U	NA	0.34 U	0.32 U	0.35 U	0.29 U	0.31 U	NA
Calcium	--	--	--	mg/kg	2340 J	NA	4310 J	48300 J	6710 J	53000 J	41300 J	NA
Chromium	--	--	--	mg/kg	13.1	NA	11.4	9.8	12.6	8.2	11.8 J	NA
Cobalt	**2.3**	35	0.027	mg/kg	**5.5**	NA	**4.3**	**4.6**	**4.4**	**4.4**	**5.1**	NA
Copper	**310**	4700	2.8	mg/kg	10.6 J+	NA	18.6 J+	10.1 J+	12.3 J+	10.4 J+	14	NA
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.6	NA	0.46	0.2	0.51	0.16	0.32	NA
Iron	**5500**	82000	35	mg/kg	**20600**	NA	**19800**	**11900**	**19500**	**13200**	**14100**	NA
Lead	400	800	--	mg/kg	15 J	15	8.7 J	7.1 J	8.7 J	7.9 J	23.3 J	20.6
Magnesium	--	--	--	mg/kg	13300 J	NA	13200 J	14200 J	14200 J	21600 J	9170	NA
Manganese	**180**	2600	2.8	mg/kg	**533**	NA	**694**	**371**	**438**	**399**	**446**	NA
Mercury	1.1	4.6	0.0033	mg/kg	0.012 U	NA	0.019	0.023	0.014 J	0.025	0.02	NA
Nickel	**150**	2200	2.6	mg/kg	14 J+	NA	11.8 J+	9.4 J+	13.4 J+	8.8 J+	19.2	NA
Potassium	--	--	--	mg/kg	927 J	NA	1080 J	757 J	845 J	778 J	1100	NA
Selenium	39	580	0.052	mg/kg	0.41 U	NA	0.42 U	0.39 U	0.43 U	0.36 U	0.38 U	NA
Silver	39	580	0.08	mg/kg	0.8 U	NA	0.83 U	0.77 U	0.83 U	0.69 U	0.75 U	NA
Sodium	--	--	--	mg/kg	74 J	NA	49.9 J	39.2 U	53.7 J	119	68.3 J	NA
Thallium	**0.078**	1.2	0.0014	mg/kg	0.17 U	NA	0.17 U	0.16 U	0.17 U	0.14 U	0.15 U	NA
Vanadium	**39**	580	8.6	mg/kg	17.7	NA	11.9	5.3	12.4	7	12.2	NA
Zinc	2300	35000	37	mg/kg	75.5 J	NA	43.9 J	38.6 J	45 J	36.2 J	45.4	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-016a	CFMW-016a	CFMW-016a	CFMW-018	CFMW-018	CFMW-018	CFMW-018	CFMW-018
					Sample Date:	6/21/2016	6/21/2016	6/21/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	79 - 84	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	10 - 12
					Sample Designation:	CFMW-016a-SO-0.5-2	CFMW-016a-SO-10-12	CFMW-016a-SO-79-84	CFMW-018-SO-0-0.5	CFMW-018-SO-0.5-2.0	CFMW-018-SO-10-12	CFMW-018-SO-0-0.5-Pb	CFMW-DUP2-SO
Aluminum	**7700**	110000	3000	mg/kg		**11800**	**14700**	NA	**10900 J**	**9270 J**	6030 J	NA	7290 J
Antimony	3.1	47	0.035	mg/kg		0.41 UJ	0.4 UJ	NA	0.35 UJ	0.35 UJ	0.34 UJ	NA	0.31 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**5**	**4.2**	NA	**11.3 J**	**10.2 J**	**4.7 J**	NA	**4.5 J**
Barium	1500	22000	16	mg/kg		125 J	133 J	NA	97.4	49.9	48	NA	46.4
Beryllium	**16**	230	1.9	mg/kg		0.38 J	0.48	NA	0.4	0.4	0.3 J	NA	0.32
Cadmium	**7.1**	98	0.069	mg/kg		0.31 U	0.31 U	NA	0.26 U	0.27 U	0.26 U	NA	0.24 U
Calcium	--	--	--	mg/kg		16300 J	10500 J	NA	59400	67000	35100	NA	32300
Chromium	--	--	--	mg/kg		12.2 J	10.9 J	NA	10.5	9.4	8.2	NA	8.8
Cobalt	**2.3**	35	0.027	mg/kg		**6.2**	**5.6**	NA	**5.1**	**4.7**	**4.5**	NA	**5.4**
Copper	**310**	4700	2.8	mg/kg		16.9	18	NA	15.4 J	11.6 J	9.5 J	NA	11.1 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.018 U	0.042 J	0.016 U	0.018 U	0.018 U	0.017 U	NA	0.016 U
Iron	**5500**	82000	35	mg/kg		**16700**	**15900**	NA	**14000**	**14700**	**12700**	NA	**13800**
Lead	400	800	--	mg/kg		8.8 J	10.3 J	NA	12.4	9.8	6	9.7	6
Magnesium	--	--	--	mg/kg		11500	9720	NA	13100	18800	10400	NA	11400
Manganese	**180**	2600	2.8	mg/kg		**483**	**325**	NA	**405 J**	**436 J**	**362 J**	NA	**352 J**
Mercury	1.1	4.6	0.0033	mg/kg		0.076	0.025	NA	0.034	0.031	0.011 J	NA	0.011 U
Nickel	**150**	2200	2.6	mg/kg		12.5	11.8	NA	14.9	11.8	9	NA	10.4
Potassium	--	--	--	mg/kg		984	1070	NA	1160	861	455	NA	507
Selenium	39	580	0.052	mg/kg		0.38 U	0.38 U	NA	0.32 U	0.33 U	0.32 U	NA	0.29 U
Silver	39	580	0.08	mg/kg		0.75 U	0.74 U	NA	0.63 U	0.64 U	0.63 U	NA	0.57 U
Sodium	--	--	--	mg/kg		39 J	37.8 U	NA	32.4 U	32.8 U	32.1 U	NA	29.3 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.15 U	0.15 U	NA	0.13 U	0.13 U	0.13 U	NA	0.12 U
Vanadium	**39**	580	8.6	mg/kg		9.7	14.7	NA	10.4	8.7	6.9	NA	7.4
Zinc	2300	35000	37	mg/kg		47.9	50.1	NA	41.3	37.8	30.9	NA	35

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-022	CFMW-022	CFMW-022	CFMW-022	CFMW-022
					Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12
					Sample Designation:	CFMW-019a-SO-0-0.5	CFMW-019a-SO-0.5-2	CFMW-019a-SO-10-12	CFMW-DUP5-SO	CFMW-022-SO-0-0.5	CFMW-022-SO-0-0.5-Pb	CFMW-022-SO-0.5-2	CFMW-DUP12-SO	CFMW-022-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg		**9620**	**18100**	7510	**15000**	**10600**	NA	**9380**	**7860**	**11000 J**
Antimony	3.1	47	0.035	mg/kg		0.37 UJ	0.36 UJ	0.34 UJ	0.39 UJ	0.4 UJ	NA	0.39 UJ	0.42 UJ	0.46 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.9**	**4.3**	**4.1**	**3.8**	**4.8**	NA	**7.8**	**4.2 J**	**3.4 J**
Barium	1500	22000	16	mg/kg		91.7	164	62.2	139	68.8	NA	54.1	69.6	75.5 J
Beryllium	**16**	230	1.9	mg/kg		0.36	0.55	0.33	0.62	0.33 J	NA	0.29 J	0.27 J	0.45
Cadmium	**7.1**	98	0.069	mg/kg		0.28 U	0.27 U	0.26 U	0.29 U	0.3 U	NA	0.29 U	0.32 U	0.35 U
Calcium	--	--	--	mg/kg		11200	2280	53300	1820	35000	NA	95300	29500 J	16500
Chromium	--	--	--	mg/kg		8.2	9.5	7.5	8.7	10	NA	9.7	8.2	9.3 J
Cobalt	**2.3**	35	0.027	mg/kg		**3.9**	**5.8**	**4.2**	**4.5**	**4.7**	NA	**5.1**	**4.9**	**4.8**
Copper	**310**	4700	2.8	mg/kg		13.1 J	11 J+	8.5 J	11.1 J	12.3	NA	15.2	12.1	19.4
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.063 J	0.024 J	0.015 U	0.018 U	0.29	NA	0.045 J	0.079 J	0.42
Iron	**5500**	82000	35	mg/kg		**11000**	**15100**	**11700**	**13400**	**15300**	NA	**12600**	**12900**	**13700 J**
Lead	400	800	--	mg/kg		11.9 J	10.3	5.4 J	8.5 J	9.1	21.6	9.1	5.9	8.9 J
Magnesium	--	--	--	mg/kg		7480	8850	12300	8380	10600	NA	12300	11000	11700
Manganese	**180**	2600	2.8	mg/kg		**368**	**350**	**324**	**297**	**368**	NA	**337**	**378**	**334 J**
Mercury	1.1	4.6	0.0033	mg/kg		0.024	0.014 U	0.011 U	0.013 U	0.018	NA	0.031 J+	0.028	0.022
Nickel	**150**	2200	2.6	mg/kg		9.1	10.3	8.4	9.1	11.7	NA	10.1	10.1	10.4
Potassium	--	--	--	mg/kg		847	1200 J+	658	1200	593	NA	727	657	776
Selenium	39	580	0.052	mg/kg		0.34 U	0.34 U	0.32 U	0.36 U	0.37 U	NA	0.36 U	0.39 U	0.43 U
Silver	39	580	0.08	mg/kg		0.67 U	0.66 U	0.62 U	0.71 U	0.73 U	NA	0.71 U	0.77 U	0.85 U
Sodium	--	--	--	mg/kg		34.2 U	94.3	56.1 J	77.5 J	37.1 U	NA	36.2 U	39.4 U	95 J
Thallium	**0.078**	1.2	0.0014	mg/kg		0.14 U	**0.14 J**	0.13 U	0.15 U	0.15 U	NA	0.15 U	0.16 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg		8.6	14.6	6.6	12.6	10.7	NA	7.2	6.4	9.1 J
Zinc	2300	35000	37	mg/kg		34.6	39.6	31.6	37.9	39	NA	30.4	32.6	38 J

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-023a	CFMW-023a	CFMW-023a	CFMW-023a	CFMW-025a	CFMW-025a	CFMW-025a
					Sample Date:	6/17/2016	6/17/2016	6/17/2016	6/18/2016	7/13/2016	7/13/2016	7/13/2016
					Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	123 - 128	0 - 0.5	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-023a-SO-0-0.5	CFMW-023a-SO-0-0.5-Pb	CFMW-023a-SO-0.5-2	CFMW-023a-SO-10-12	CFMW-023a-SO-123-128	CFMW-025a-SO-0-0.5	CFMW-025a-SO-0-0.5Pb	CFMW-025a-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg	**20200**	NA	**16100**	**9810**	NA	**23400**	NA	**20800**
Antimony	3.1	47	0.035	mg/kg	0.42 UJ	NA	0.47 UJ	0.43 UJ	NA	0.46 UJ	NA	0.44 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**6.1**	NA	**8.4**	**5.3**	NA	**7.1**	NA	**3.9**
Barium	1500	22000	16	mg/kg	166	NA	111	133	NA	333	NA	206
Beryllium	**16**	230	1.9	mg/kg	0.55	NA	0.6	0.34 J	NA	0.64	NA	0.62
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	NA	0.36 U	0.32 U	NA	0.35 U	NA	0.33 U
Calcium	--	--	--	mg/kg	4540 J	NA	2160 J	60200 J	NA	5920	NA	2110
Chromium	--	--	--	mg/kg	8.7	NA	15.5	10	NA	10.4 J	NA	12.1 J
Cobalt	**2.3**	35	0.027	mg/kg	**6 J+**	NA	**6.9 J+**	**5.7 J+**	NA	**6.6**	NA	**6.6**
Copper	**310**	4700	2.8	mg/kg	8 J	NA	11.9 J	9.7 J	NA	20	NA	16
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.057 J	NA	0.02 J	0.016 U	0.016 U	0.2	NA	0.069 J
Iron	**5500**	82000	35	mg/kg	**12800**	NA	**18100**	**13100**	NA	**18200 J**	NA	**18400 J**
Lead	400	800	--	mg/kg	13.4	12	13.6	8.7	NA	18.5	20.3	10.4
Magnesium	--	--	--	mg/kg	8920	NA	12400	16100	NA	7000	NA	8050
Manganese	**180**	2600	2.8	mg/kg	**444**	NA	**442**	**360**	NA	**778 J**	NA	**526 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.014 U	NA	0.04	0.026	NA	0.027	NA	0.013 U
Nickel	**150**	2200	2.6	mg/kg	89 J-	NA	12 J-	9.4 J-	NA	13.9 J	NA	11.8 J
Potassium	--	--	--	mg/kg	1010	NA	1380	763	NA	1140	NA	779
Selenium	39	580	0.052	mg/kg	0.39 U	NA	0.44 U	0.4 U	NA	0.43 U	NA	0.41 U
Silver	39	580	0.08	mg/kg	0.77 U	NA	0.87 U	0.78 U	NA	0.85 U	NA	0.8 U
Sodium	--	--	--	mg/kg	72.6 J	NA	44.2 U	57.6 J	NA	157	NA	63 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	NA	0.18 U	0.16 U	NA	0.17 U	NA	0.16 U
Vanadium	**39**	580	8.6	mg/kg	21.7	NA	15.4	5.9	NA	16.3 J	NA	18.3 J
Zinc	2300	35000	37	mg/kg	54.5	NA	45.7	35.5	NA	84.9	NA	48.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
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Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-025a	CFMW-026	CFMW-026	CFMW-026	CFMW-026	CFMW-026	CFMW-027
					Sample Date:	7/13/2016	7/13/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/30/2016
					Sample Depth (ft-bls):	10 - 12	35 - 40	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5
					Sample Designation:	CFMW-025a-SO-10-12	CFMW-025a-SO-35-40	CFMW-026-SO-0-0.5	CFMW-026-SO-0-0.5-Pb	CFMW-026-SO-0.5-2	CFMW-DUP15-SO	CFMW-026-SO-10-12	CFMW-027-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg	5790	NA	**11500**	NA	**19000**	**18100**	**7850**	**17000**
Antimony	3.1	47	0.035	mg/kg	0.39 UJ	NA	0.48 UJ	NA	0.37 UJ	0.36 UJ	0.34 UJ	0.47 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**3.4**	NA	**3.1**	NA	**4**	**4.3**	**4.1**	**3.7**
Barium	1500	22000	16	mg/kg	44.7	NA	305	NA	187	173	62.5	48.9 J
Beryllium	**16**	230	1.9	mg/kg	0.37 J	NA	0.41 J	NA	0.46	0.48	0.36	0.59
Cadmium	**7.1**	98	0.069	mg/kg	0.29 U	NA	0.66 J	NA	0.28 U	0.28 U	0.26 U	1.1
Calcium	--	--	--	mg/kg	20400	NA	8020	NA	1790	1590	29500	1370
Chromium	--	--	--	mg/kg	7 J	NA	6	NA	9.6	8.8	8.1	16.6
Cobalt	**2.3**	35	0.027	mg/kg	**5.8**	NA	**3.4**	NA	**5.7**	**5**	**5.3**	**2.6**
Copper	**310**	4700	2.8	mg/kg	12.5	NA	14.5 J+	NA	10.1 J+	8.8 J+	14.4 J+	16.9 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.018 J	0.023 J	0.33	NA	0.057 J	0.06 J	0.014 U	1.2
Iron	**5500**	82000	35	mg/kg	**11500 J**	NA	**7940**	NA	**15800**	**15200**	**13200**	2920
Lead	400	800	--	mg/kg	9.7	NA	44.8 J+	37.8	11.4 J+	10.2 J+	5.7 J+	30.3
Magnesium	--	--	--	mg/kg	7590	NA	3030	NA	7290	6970	11100	1090
Manganese	**180**	2600	2.8	mg/kg	**227 J**	NA	**631 J**	NA	**523 J**	**473 J**	**432 J**	46
Mercury	1.1	4.6	0.0033	mg/kg	0.014 J	NA	0.025	NA	0.013 U	0.013 U	0.012 U	0.031 J+
Nickel	**150**	2200	2.6	mg/kg	8 J	NA	17.4	NA	11.6	9.9	9.3	84.5
Potassium	--	--	--	mg/kg	478	NA	1530	NA	1070	1000	672	266 J+
Selenium	39	580	0.052	mg/kg	0.36 U	NA	0.45 U	NA	0.34 U	0.34 U	0.32 U	1 J
Silver	39	580	0.08	mg/kg	0.71 U	NA	0.88 U	NA	0.67 U	0.66 U	0.63 U	0.85 U
Sodium	--	--	--	mg/kg	36.2 U	NA	45.1 U	NA	34.3 U	33.9 U	32.1 U	116
Thallium	**0.078**	1.2	0.0014	mg/kg	0.15 U	NA	0.18 U	NA	0.14 U	0.14 U	0.13 U	**0.31 J**
Vanadium	**39**	580	8.6	mg/kg	7.2 J	NA	11.6	NA	14.4	13.5	9.3	34.5
Zinc	2300	35000	37	mg/kg	24.8	NA	238	NA	140	112	61.5	130

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-027	CFMW-027	CFMW-027	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-028a
				Sample Date:	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	4.5 - 6	10 - 12
				Sample Designation:	CFMW-027-SO-0-0.5Pb	CFMW-027-SO-0.5-2	CFMW-027-SO-10-12	CFMW-028a-SO-0-0.5	CFMW-028a-SO-0-0.5Pb	CFMW-028a-SO-0.5-2	CFMW-028a-SO-4.5-6	CFMW-028a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	NA	**23000**	**9220**	**14200**	NA	**14900**	**85500**	5370
Antimony	3.1	47	0.035	mg/kg	NA	0.45 UJ	0.33 UJ	0.38 UJ	NA	0.39 UJ	0.88 J-	0.33 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	NA	**9.3**	**3.6**	**5.4**	NA	**5.1**	**34.2**	**2.6**
Barium	1500	22000	16	mg/kg	NA	111 J	67.3 J	96.8 J	NA	107 J	510 J	52 J
Beryllium	**16**	230	1.9	mg/kg	NA	0.85	0.36	0.48	NA	0.41	**32.7**	0.22 J
Cadmium	**7.1**	98	0.069	mg/kg	NA	1.1	0.25 U	0.29 U	NA	0.29 U	**8**	0.25 U
Calcium	--	--	--	mg/kg	NA	2500	120000	8390	NA	8080	69600	115000 J
Chromium	--	--	--	mg/kg	NA	25.4	7.5	11.3	NA	11.6	27.5	6.9
Cobalt	**2.3**	35	0.027	mg/kg	NA	**6.2**	**2.9**	**5.2**	NA	**5.2**	**8**	**2.7 J**
Copper	**310**	4700	2.8	mg/kg	NA	30.1 J	9.4 J	15.5 J	NA	13.7 J	19.3 J	7.5 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg	NA	1.6	0.075 J	0.043 J	NA	0.054 J	**15.3**	0.37
Iron	**5500**	82000	35	mg/kg	NA	**11400**	**9350**	**17000**	NA	**17700**	**11000**	**8250**
Lead	400	800	--	mg/kg	35.2	36	5.8	9.7	10.9	9.6	104	3.6 J
Magnesium	--	--	--	mg/kg	NA	5180	10100	10800	NA	11900	9420	24800 J
Manganese	**180**	2600	2.8	mg/kg	NA	36.5	**331**	**319**	NA	**416**	73.4	**667 J**
Mercury	1.1	4.6	0.0033	mg/kg	NA	0.029 J+	0.025 J+	0.017 J+	NA	0.022 J+	0.035 J+	0.011 J+
Nickel	**150**	2200	2.6	mg/kg	NA	**151**	8.1	11.8	NA	12.1	**252**	6.9
Potassium	--	--	--	mg/kg	NA	848 J+	1630 J+	948 J+	NA	853 J+	5050 J+	473 J+
Selenium	39	580	0.052	mg/kg	NA	0.94 J	0.31 U	0.36 U	NA	0.36 U	1.4 J	0.31 U
Silver	39	580	0.08	mg/kg	NA	0.82 U	0.6 U	0.7 U	NA	0.71 U	1.1 U	0.6 U
Sodium	--	--	--	mg/kg	NA	83.1 J	30.8 U	35.8 U	NA	36.3 U	2820	54.6 J
Thallium	**0.078**	1.2	0.0014	mg/kg	NA	**0.65**	**0.16 J**	0.14 U	NA	0.15 U	**2.2**	0.12 U
Vanadium	**39**	580	8.6	mg/kg	NA	**85.9**	8.1	10.8	NA	11	**166**	6.3
Zinc	2300	35000	37	mg/kg	NA	196	32.4	48	NA	49.6	403	25.9

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-028a	CFMW-028a	CFMW-029	CFMW-029	CFMW-029	CFMW-032a	CFMW-032a	CFMW-032a
				Sample Date:	6/30/2016	6/30/2016	5/18/2016	5/18/2016	5/18/2016	8/8/2016	8/8/2016	8/8/2016
				Sample Depth (ft-bls):	48 - 53	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-028a-SO-48-53	CFMW-DUP19-SO	CFMW-029-SO-0-0.5	CFMW-029-SO-0.5-2.0	CFMW-029-SO-10-12	CFMW-032a-SO-0-0.5	CFMW-032a-SO-0-0.5Pb	CFMW-032a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	NA	**8260**	**19500**	**11900**	5980	**19600**	NA	**10600**
Antimony	3.1	47	0.035	mg/kg	NA	0.31 UJ	0.33 UJ	0.34 UJ	0.33 UJ	0.46 UJ	NA	0.4 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	NA	**3.6**	**5.4**	**4.5**	**4.6**	**6.1**	NA	**5.3**
Barium	1500	22000	16	mg/kg	NA	148 J	81.5	126	42.7	258	NA	95.6
Beryllium	**16**	230	1.9	mg/kg	NA	0.35	0.99	0.48	0.36	0.72	NA	0.38 J
Cadmium	**7.1**	98	0.069	mg/kg	NA	0.24 U	0.27 J	0.26 U	0.25 U	0.35 U	NA	0.3 U
Calcium	--	--	--	mg/kg	NA	30200 J	25400	21800	27600	20500	NA	27100
Chromium	--	--	--	mg/kg	NA	8.4	15.5	10.4	6.6	10.9	NA	8.6
Cobalt	**2.3**	35	0.027	mg/kg	NA	**5.2 J**	**5.8**	**5.6**	**4.5**	**6**	NA	**5.1**
Copper	**310**	4700	2.8	mg/kg	NA	13.2 J	16.4	28.6	13.2	17.7	NA	15.9
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.061 J	0.27	0.21	0.058 J	0.025 J	0.31	NA	0.1 J
Iron	**5500**	82000	35	mg/kg	NA	**13100**	**13700**	**13500**	**10300**	**15400**	NA	**12300**
Lead	400	800	--	mg/kg	NA	7.4 J	48	12.1	5.5	13.7	13.3	8.7
Magnesium	--	--	--	mg/kg	NA	12200 J	11500	9500	7860	8850	NA	11000
Manganese	**180**	2600	2.8	mg/kg	NA	**319 J**	**333**	**429**	**227**	**524**	NA	**350**
Mercury	1.1	4.6	0.0033	mg/kg	NA	0.011 U	0.019	0.015 J	0.015 J	0.03	NA	0.014 J
Nickel	**150**	2200	2.6	mg/kg	NA	11	46.5	13.6	8.6	12.6	NA	11
Potassium	--	--	--	mg/kg	NA	695 J+	1100	814	507	918	NA	739
Selenium	39	580	0.052	mg/kg	NA	0.29 U	1 J	0.32 U	0.31 U	0.43 U	NA	0.37 U
Silver	39	580	0.08	mg/kg	NA	0.57 U	0.6 U	0.63 U	0.6 U	0.84 U	NA	0.73 U
Sodium	--	--	--	mg/kg	NA	29.3 UJ	209	58.1 J	30.5 U	117	NA	94 J
Thallium	**0.078**	1.2	0.0014	mg/kg	NA	0.12 U	**0.14 J**	0.13 U	0.12 U	0.17 U	NA	0.15 U
Vanadium	**39**	580	8.6	mg/kg	NA	8.2	22.8	11.1	6.6	12.3	NA	7.4
Zinc	2300	35000	37	mg/kg	NA	37.3	114	61.5	30	65.3	NA	39.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-032a	CFMW-032a	CFMW-032a	CFMW-033	CFMW-033	CFMW-033	CFMW-033	CFMW-034
			Sample Date:	8/8/2016	8/8/2016	8/8/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	5/31/2016
			Sample Depth (ft-bls):	10 - 12	43 - 48	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFMW-032a-SO-10-12	CFMW-032a-SO-43-48	CFMW-Dup21-SO	CFMW-033-SO-0-0.5	CFMW-033-SO-0-0.5Pb	CFMW-033-SO-0.5-2	CFMW-033-SO-10-12	CFMW-034-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units							
Aluminum	**7700**	110000	3000	mg/kg	**9740**	NA	**10500**	**8530**	NA	**9780**	6930	5610
Antimony	3.1	47	0.035	mg/kg	0.42 UJ	NA	0.41 UJ	0.4 UJ	NA	0.36 UJ	0.33 UJ	0.41 U
Arsenic	**0.68**	3	0.0015	mg/kg	**4.4**	NA	**4.2**	**5.3**	NA	**2.9**	**3.4**	**3.2**
Barium	1500	22000	16	mg/kg	54	NA	56.4	56.6 J	NA	100 J	59.9 J	53.4
Beryllium	**16**	230	1.9	mg/kg	0.31 J	NA	0.44	0.23 J	NA	0.29 J	0.29 J	0.21 J
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	NA	0.31 U	0.3 U	NA	0.27 U	0.25 U	0.31 U
Calcium	--	--	--	mg/kg	1100	NA	1160	44600	NA	9670	31200	37600
Chromium	--	--	--	mg/kg	8.8	NA	10	7.6	NA	7.3	8.8	7.3
Cobalt	**2.3**	35	0.027	mg/kg	**6**	NA	**5.9**	**5**	NA	**4.1**	**4.5**	**4**
Copper	**310**	4700	2.8	mg/kg	14.4	NA	13.5	10.3 J	NA	17 J	9.7 J	8.9
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.063 J	0.18	0.057 J	0.097 J	NA	0.035 J	0.017 U	0.11
Iron	**5500**	82000	35	mg/kg	**13400**	NA	**14800**	**12200**	NA	**10600**	**11900**	**9540**
Lead	400	800	--	mg/kg	7.3	NA	7.1	9.2	47.3	6	4.5	6.7
Magnesium	--	--	--	mg/kg	8300	NA	8990	12100	NA	6400	12200	9240
Manganese	**180**	2600	2.8	mg/kg	**304**	NA	**300**	**354**	NA	**328**	**324**	**305**
Mercury	1.1	4.6	0.0033	mg/kg	0.012 J	NA	0.015 J	0.025 J+	NA	0.015 J+	0.014 J+	0.026
Nickel	**150**	2200	2.6	mg/kg	12	NA	12.1	9.3	NA	8	8.8	10
Potassium	--	--	--	mg/kg	622	NA	595	698 J+	NA	634 J+	693 J+	388
Selenium	39	580	0.052	mg/kg	0.4 U	NA	0.39 U	0.37 U	NA	0.34 U	0.31 U	0.39 U
Silver	39	580	0.08	mg/kg	0.78 U	NA	0.76 U	0.72 U	NA	0.66 U	0.61 U	0.76 U
Sodium	--	--	--	mg/kg	168	NA	184	37 U	NA	33.6 U	33.2 J	38.7 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	NA	0.16 U	0.15 U	NA	0.14 U	0.13 U	0.16 U
Vanadium	**39**	580	8.6	mg/kg	9.8	NA	8.8	6.3	NA	7.6	6.3	6
Zinc	2300	35000	37	mg/kg	35.6	NA	36.1	34.6	NA	31.4	29.3	26.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-034	CFMW-034	CFMW-034	CFMW-035	CFMW-035	CFMW-035	CFMW-035	CFMW-037	CFMW-037
					Sample Date:	5/31/2016	5/31/2016	5/31/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/24/2016	6/24/2016
					Sample Depth (ft-bls):	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-034-SO-0.5-2	CFMW-DUP10-SO	CFMW-034-SO-10-12	CFMW-035-SO-0-0.5	CFMW-DUP11-SO	CFMW-035-SO-0.5-2	CFMW-035-SO-10-12	CFMW-037-SO-0-0.5	CFMW-037-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg		6850	**10200**	7620	**27200**	**18500**	**9430**	6380	**51200**	**8840**
Antimony	3.1	47	0.035	mg/kg		0.42 U	0.33 UJ	0.32 U	0.41 UJ	0.44 UJ	0.46 UJ	0.41 UJ	0.46 U	0.47 U
Arsenic	**0.68**	3	0.0015	mg/kg		**3.7**	**4.1**	**3.1**	**5.1**	**5**	**3.9**	**3.5**	**5.2**	**3.9**
Barium	1500	22000	16	mg/kg		66.4	88.7	51.1	93.4	81.2	42.4	42.9	76.3	108
Beryllium	**16**	230	1.9	mg/kg		0.3 J	0.45	0.37	0.85	0.62	0.29 J	0.28 J	0.7	0.38 J
Cadmium	**7.1**	98	0.069	mg/kg		0.32 U	0.25 U	0.24 U	0.44 J	0.33 U	0.35 U	0.31 U	0.65 J	0.35 U
Calcium	--	--	--	mg/kg		41900	15200	41300	14000	21000	34000	35600	7820	35900
Chromium	--	--	--	mg/kg		7.3	10.6	8.2	15.2	15.1	10	9.6	12.4	8.8
Cobalt	**2.3**	35	0.027	mg/kg		**4.1**	**6.6**	**4.8**	**6.2**	**6.2**	**6.5**	**4.4**	**4.4**	**4.8**
Copper	**310**	4700	2.8	mg/kg		9.4	16.1	10.9	25.8	26.7	13.8	11.2	14.3	12.7
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.13	0.019 J	0.018 J	0.22 J	0.13 J	0.017 U	0.017 U	0.09 J	0.13
Iron	**5500**	82000	35	mg/kg		**10300**	**16000**	**12300**	**16400**	**20500**	**16600**	**11400**	**8560**	**11800**
Lead	400	800	--	mg/kg		9.6	9.3	5.3	21.7	21	7.4	5.1	20.1	9.8
Magnesium	--	--	--	mg/kg		10500	11100	11600	8430	10100	12400	11100	4610	11200
Manganese	**180**	2600	2.8	mg/kg		**310**	**472**	**310**	**364**	**390**	**417**	**313**	178	**391**
Mercury	1.1	4.6	0.0033	mg/kg		0.018	0.048 J	0.027	0.025	0.021	0.018 J	0.012 J	0.013 U	0.012 U
Nickel	**150**	2200	2.6	mg/kg		11	12.8	9.9	47.4	29.9	13.4	8.4	81.8	10.6
Potassium	--	--	--	mg/kg		440	901	703 J+	956	823	502	642	425	640
Selenium	39	580	0.052	mg/kg		0.39 U	0.31 U	0.3 U	0.38 U	0.41 U	0.43 U	0.38 U	0.43 U	0.44 U
Silver	39	580	0.08	mg/kg		0.77 U	0.6 U	0.59 U	0.75 UJ	1.5 J	0.85 U	0.75 U	0.84 U	0.85 U
Sodium	--	--	--	mg/kg		107	285	29.9 U	133	84.9 J	43.3 U	38.4 J	182	43.5 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.16 U	0.12 U	0.12 U	0.15 U	0.17 U	0.17 U	0.15 U	0.17 U	0.18 U
Vanadium	**39**	580	8.6	mg/kg		7.6	10.8	9	21.1	16.4	8.2	6.6	25.1	9
Zinc	2300	35000	37	mg/kg		29	42.2	32.2	151 J	55.6 J	40.4	28.5	64.2	33.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-037	CFMW-038	CFMW-038	CFMW-038	CFMW-038	CFMW-040	CFMW-040	CFMW-040
				Sample Date:	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/28/2016	6/28/2016	6/28/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-037-SO-10-12	CFMW-038-SO-0-0.5 Pb	CFMW-038-SO-0-0.5	CFMW-038-SO-0.5-2	CFMW-038-SO-10-12	CFMW-040-SO-0-0.5	CFMW-040-SO-0-0.5Pb	CFMW-040-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**9270**	NA	**9980**	**12000**	**8820**	**13700**	NA	**13100**
Antimony	3.1	47	0.035	mg/kg	0.42 U	NA	0.44 U	0.44 U	0.43 U	0.34 UJ	NA	0.36 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.4**	NA	**4.4**	**3.8**	**3.7**	**3.6**	NA	**5.1**
Barium	1500	22000	16	mg/kg	74.9	NA	92.6	189	114	122	NA	116
Beryllium	**16**	230	1.9	mg/kg	0.44	NA	0.4 J	0.42 J	0.37 J	0.54	NA	0.56
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	NA	0.33 U	0.33 U	0.33 U	0.26 U	NA	0.27 U
Calcium	--	--	--	mg/kg	39400	NA	24500	12700	27800	3720	NA	2260
Chromium	--	--	--	mg/kg	9.7	NA	9.2	8.3	12.1	10.2 J-	NA	11.8 J-
Cobalt	**2.3**	35	0.027	mg/kg	**5**	NA	**5.7**	**4.7**	**4.9**	**4.1 J-**	NA	**6.2 J-**
Copper	**310**	4700	2.8	mg/kg	13.8	NA	14.3	12.4	20	15.3 J-	NA	11.2 J-
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.019 U	NA	0.024 J	0.035 J	0.029 J	0.12	NA	0.058 J
Iron	**5500**	82000	35	mg/kg	**14700**	NA	**14500**	**14500**	**13300**	**10100**	NA	**17600**
Lead	400	800	--	mg/kg	6.6	12.4	8.2	7	6.4	57.7 J-	184	22.4 J-
Magnesium	--	--	--	mg/kg	12300	NA	9580	8820	9720	5540	NA	9180
Manganese	**180**	2600	2.8	mg/kg	**436**	NA	**391**	**445**	**445**	**753**	NA	**498**
Mercury	1.1	4.6	0.0033	mg/kg	0.016 J	NA	0.017 J	0.013 U	0.012 J	0.012 J	NA	0.012 U
Nickel	**150**	2200	2.6	mg/kg	10.8	NA	10.8	9	15.1	21.8 J-	NA	11.5 J-
Potassium	--	--	--	mg/kg	656	NA	718	764	733	621	NA	1010
Selenium	39	580	0.052	mg/kg	0.4 U	NA	0.41 U	0.41 U	0.4 U	0.32 U	NA	0.34 U
Silver	39	580	0.08	mg/kg	0.77 U	NA	0.8 U	0.8 U	0.79 U	0.63 U	NA	0.66 U
Sodium	--	--	--	mg/kg	39.5 U	NA	40.7 U	40.9 U	44.3 J	32.2 U	NA	33.7 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	NA	0.16 U	0.17 U	0.16 U	0.13 U	NA	0.14 U
Vanadium	**39**	580	8.6	mg/kg	8.5	NA	10.2	10.6	8.3	11.6	NA	13.7
Zinc	2300	35000	37	mg/kg	37.6	NA	43.2	39.8	31	52.3	NA	39.2

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-040	CFMW-042	CFMW-042	CFMW-042	CFMW-042	CFMW-042	CFMW-043	CFMW-043
				Sample Date:	6/28/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016	6/15/2016	6/15/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5
				Sample Designation:	CFMW-040-SO-10-12	CFMW-042-SO-0-0.5	CFMW-042-SO-0-0.5-Pb	CFMW-042-SO-0.5-2	CFMW-DUP16-SO	CFMW-042-SO-10-12	CFMW-043-SO-0-0.5	CFMW-043-SO-0-0.5-Pb
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**9360**	**32000**	NA	**10400**	**13700**	6210	**14700**	NA
Antimony	3.1	47	0.035	mg/kg	0.37 UJ	0.54 UJ	NA	0.43 UJ	0.42 UJ	0.41 UJ	0.34 UJ	NA
Arsenic	**0.68**	3	0.0015	mg/kg	**13.1**	**5.5**	NA	**4.6 J**	**4.3 J**	**5.2 J**	**5**	NA
Barium	1500	22000	16	mg/kg	91.6	376	NA	78.8 J	146 J	77.3	131	NA
Beryllium	**16**	230	1.9	mg/kg	0.55	0.89	NA	0.45	0.51	0.27 J	0.43	NA
Cadmium	**7.1**	98	0.069	mg/kg	0.28 U	1.2 J	NA	0.33 U	0.32 U	0.31 U	0.26 U	NA
Calcium	--	--	--	mg/kg	5850	9850	NA	12800 J	6480 J	32900	21500	NA
Chromium	--	--	--	mg/kg	11 J-	28.3	NA	9.3	8.2	8.3	11.9	NA
Cobalt	**2.3**	35	0.027	mg/kg	**7.5 J-**	**6.1**	NA	**5.5**	**4.7**	**4.3**	**4.9**	NA
Copper	**310**	4700	2.8	mg/kg	21.2 J-	23.8 J+	NA	18.9 J	16.9 J	10.3 J	17.3 J+	NA
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.041 J	0.87	NA	0.03 J	0.023 J	0.017 U	0.11	NA
Iron	**5500**	82000	35	mg/kg	**16600**	**16700**	NA	**13900**	**12600**	**10300**	**14100**	NA
Lead	400	800	--	mg/kg	22 J-	28.2 J+	20.7	9.2	14.1	5.6	23.2 J+	23.7
Magnesium	--	--	--	mg/kg	9030	7240	NA	10800	6670	9960	8590	NA
Manganese	**180**	2600	2.8	mg/kg	**480**	**548 J**	NA	**394**	**414**	**297**	**569 J**	NA
Mercury	1.1	4.6	0.0033	mg/kg	0.017	0.031	NA	0.041 J	0.018 J	0.011 J	0.018 J	NA
Nickel	**150**	2200	2.6	mg/kg	13 J-	27.5	NA	11.1	9.2	8.1	18.9	NA
Potassium	--	--	--	mg/kg	984	1450	NA	658	745	673	889	NA
Selenium	39	580	0.052	mg/kg	0.35 U	0.5 U	NA	0.4 U	0.39 U	0.38 U	0.32 U	NA
Silver	39	580	0.08	mg/kg	0.68 U	0.99 U	NA	0.78 U	0.76 U	0.75 U	0.63 U	NA
Sodium	--	--	--	mg/kg	34.9 U	67.1 J	NA	43.8 J	135 J	38.7 J	32.2 U	NA
Thallium	**0.078**	1.2	0.0014	mg/kg	0.14 U	0.2 U	NA	0.16 U	0.16 U	0.15 U	0.13 U	NA
Vanadium	**39**	580	8.6	mg/kg	9.4	31.6	NA	9.6	13.3	5.3	12.4	NA
Zinc	2300	35000	37	mg/kg	36.6	106	NA	38.4	36.8	26.3	57.8	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-043	CFMW-043	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-045a
			Sample Date:	6/15/2016	6/15/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	8/12/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	49 - 54	0 - 0.5	
			Sample Designation:	CFMW-043-SO-0.5-2	CFMW-043-SO-10-12	CFMW-044a-SO-0-0.5	CFMW-044a-SO-0-0.5Pb	CFMW-044a-SO-0.5-2	CFMW-044a-SO-10-12	CFMW-044a-SO-49-54	CFMW-045a-SO-0-0.5	
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**28400**	6730	**22900**	NA	**9620**	5470	NA	**29500**
Antimony	3.1	47	0.035	mg/kg	0.36 UJ	0.34 UJ	0.44 UJ	NA	0.37 UJ	0.42 UJ	NA	0.46 U
Arsenic	**0.68**	3	0.0015	mg/kg	**5.1**	**3.2**	**3.7**	NA	**3.5**	**5.5**	NA	**4.1**
Barium	1500	22000	16	mg/kg	392	91.3	196	NA	73.1	63	NA	101
Beryllium	**16**	230	1.9	mg/kg	0.64	0.31 J	0.6	NA	0.53	0.33 J	NA	0.61
Cadmium	**7.1**	98	0.069	mg/kg	0.28 U	0.26 U	0.33 U	NA	0.28 U	0.32 U	NA	0.54 J
Calcium	--	--	--	mg/kg	5980	25600	3150	NA	1560	88200	NA	9260
Chromium	--	--	--	mg/kg	9.8	10.1	11.3 J+	NA	12.7 J+	6.7 J+	NA	11.9
Cobalt	**2.3**	35	0.027	mg/kg	**6.1**	**4.9**	**6.6**	NA	**5.1**	**3.1**	NA	**4.6**
Copper	**310**	4700	2.8	mg/kg	16 J+	21.5 J+	11.4 J+	NA	13.2 J+	11.4 J+	NA	16.3
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.11 J	0.016 U	0.068 J	NA	0.02 J	0.019 U	0.16	0.1 J
Iron	**5500**	82000	35	mg/kg	**18100**	**10200**	**18400**	NA	**13700**	**10900**	NA	**10500**
Lead	400	800	--	mg/kg	10.9 J+	6.9 J+	10.5 J	13.8	6.7 J	5.2 J	NA	47.6 J
Magnesium	--	--	--	mg/kg	6630	8660	7130	NA	6820	15500	NA	7590
Manganese	**180**	2600	2.8	mg/kg	**920 J**	**248 J**	**455**	NA	**257**	**417**	NA	**269**
Mercury	1.1	4.6	0.0033	mg/kg	0.014 J	0.012 U	0.014 U	NA	0.011 U	0.012 U	NA	0.013 U
Nickel	**150**	2200	2.6	mg/kg	11.8	10.3	12.4	NA	14	6.3	NA	59.9
Potassium	--	--	--	mg/kg	1330	898	858 J+	NA	519 J+	584 J+	NA	596
Selenium	39	580	0.052	mg/kg	0.34 U	0.32 U	0.41 U	NA	0.35 U	0.39 U	NA	0.43 UJ
Silver	39	580	0.08	mg/kg	0.66 U	0.63 U	0.8 U	NA	0.68 U	0.76 U	NA	0.85 U
Sodium	--	--	--	mg/kg	55.3 J	33 J	60.3 J	NA	34.7 U	38.8 U	NA	198
Thallium	**0.078**	1.2	0.0014	mg/kg	0.14 U	0.13 U	0.17 U	NA	0.14 U	0.16 U	NA	0.17 U
Vanadium	**39**	580	8.6	mg/kg	17.4	9.5	19.7 J	NA	12.2 J	5.4 J	NA	24.7 J-
Zinc	2300	35000	37	mg/kg	80.1	25.3	48.5	NA	26.6	23.3	NA	85.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-045a	CFMW-045a	CFMW-045a	CFMW-047	CFMW-047	CFMW-047	CFMW-047	CFMW-049
					Sample Date:	8/12/2016	8/12/2016	8/12/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	8/20/2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	86 - 91	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFMW-045a-SO-0.5-2	CFMW-045a-SO-10-12	CFMW-045a-SO-86-91	CFMW-047-SO-0-0.5	CFMW-047-SO-0-0.5-Pb	CFMW-047-SO-0.5-2	CFMW-047-SO-10-12	CFMW-049-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg		**14700**	7060	NA	**14100**	NA	**13600**	7150	6580
Antimony	3.1	47	0.035	mg/kg		0.43 U	0.41 U	NA	0.41 UJ	NA	0.46 UJ	0.41 UJ	0.28 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.3**	**3.3**	NA	**4.7**	NA	**6.8 J**	**3.3**	**4.1 J**
Barium	1500	22000	16	mg/kg		131	120	NA	108 J	NA	148	67.7 J	70.9 J
Beryllium	**16**	230	1.9	mg/kg		0.64	0.31 J	NA	0.42	NA	0.47	0.28 J	0.26 J
Cadmium	**7.1**	98	0.069	mg/kg		0.33 U	0.31 U	NA	0.31 U	NA	0.35 U	0.31 U	0.3 U
Calcium	--	--	--	mg/kg		6420	34500	NA	23800 J	NA	17700 J	32100 J	6920 J
Chromium	--	--	--	mg/kg		9.8	9.2	NA	10.3 J	NA	9.8	8.9 J	6.4
Cobalt	**2.3**	35	0.027	mg/kg		**4.5**	**4.6**	NA	**5.4**	NA	**5.3**	**4.5**	**3.3**
Copper	**310**	4700	2.8	mg/kg		13.6	13.5	NA	19.9	NA	16	9.8	13.2 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.018 U	0.017 U	0.1 J	0.037 J	NA	0.061 J	0.023 J	0.066 J
Iron	**5500**	82000	35	mg/kg		**12100**	**13400**	NA	**14700**	NA	**14200**	**10800**	**8070**
Lead	400	800	--	mg/kg		19.3 J	5.8 J	NA	11.6 J	13.2	9.6	6.6 J	5.8 J
Magnesium	--	--	--	mg/kg		8130	12200	NA	9580	NA	9630	9830	5960
Manganese	**180**	2600	2.8	mg/kg		**370**	**378**	NA	**385**	NA	**481**	**372**	**332**
Mercury	1.1	4.6	0.0033	mg/kg		0.013 U	0.026	NA	0.023	NA	0.026	0.017	0.021
Nickel	**150**	2200	2.6	mg/kg		20.3	10.1	NA	16.4	NA	11.1	9.1	7.6
Potassium	--	--	--	mg/kg		609	565	NA	864	NA	935	802	408 J+
Selenium	39	580	0.052	mg/kg		0.4 UJ	0.38 UJ	NA	0.39 U	NA	0.43 U	0.39 U	0.26 U
Silver	39	580	0.08	mg/kg		0.78 U	0.74 U	NA	0.75 U	NA	0.84 U	0.76 U	0.55 U
Sodium	--	--	--	mg/kg		78.1 J	63.7 J	NA	42.7 J	NA	42.8 U	38.6 U	38 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.16 U	0.15 U	NA	0.16 U	NA	0.17 U	0.16 U	0.11 U
Vanadium	**39**	580	8.6	mg/kg		14.7 J-	6.6 J-	NA	11.4	NA	11	5.6	6.1
Zinc	2300	35000	37	mg/kg		54.1	27.4	NA	64.3	NA	45.3	30.3	26.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-049a	CFMW-049a	CFMW-049a	CFMW-050	CFMW-050	CFMW-050	CFMW-050
					Sample Date:	8/20/2016	8/20/2016	8/20/2016	8/22/2016	6/22/2016	6/22/2016	6/22/2016	6/22/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	112 - 117	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2
					Sample Designation:	CFMW-049a-SO-0-0.5 Pb	CFMW-049a-SO-0.5-2	CFMW-049a-SO-10-12	CFMW-049a-SO-112-117	CFMW-050-SO-0-0.5	CFMW-050-SO-0-0.5-Pb	CFMW-050-SO-0.5-2	CFMW-DUP17-SO
Aluminum	**7700**	110000	3000	mg/kg	NA	6780	**8490**	NA	**19500**	NA	**17100**	**18700**
Antimony	3.1	47	0.035	mg/kg	NA	0.26 UJ	0.26 UJ	NA	0.52 U	NA	0.44 U	0.45 U
Arsenic	**0.68**	3	0.0015	mg/kg	NA	**2.2 J**	**3.9 J**	NA	**5.9**	NA	**7.2**	**7.2**
Barium	1500	22000	16	mg/kg	NA	53.3 J	66 J	NA	239	NA	201	220
Beryllium	**16**	230	1.9	mg/kg	NA	0.18 J	0.25 J	NA	0.69	NA	0.64	0.66
Cadmium	**7.1**	98	0.069	mg/kg	NA	0.28 U	0.28 U	NA	0.39 U	NA	0.34 U	0.34 U
Calcium	--	--	--	mg/kg	NA	13200 J	17800 J	NA	4040	NA	2930	3100
Chromium	--	--	--	mg/kg	NA	7.9	9.5	NA	12.4	NA	9.9	11.1
Cobalt	**2.3**	35	0.027	mg/kg	NA	**3.9**	**6**	NA	**6.3**	NA	**5.8**	**6.4**
Copper	**310**	4700	2.8	mg/kg	NA	7 J	14.3 J	NA	17.5 J	NA	14.5 J	15.5 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg	NA	0.056 J	0.028 U	0.03 U	0.8	NA	0.11	0.099 J
Iron	**5500**	82000	35	mg/kg	NA	**7940**	**13300**	NA	**15800**	NA	**16100**	**17100**
Lead	400	800	--	mg/kg	19.4	4.4 J	6.2 J	NA	31.7	23.7	16.4	17.6
Magnesium	--	--	--	mg/kg	NA	8210	11100	NA	6760	NA	8440	8230
Manganese	**180**	2600	2.8	mg/kg	NA	161 J	**337**	NA	**739**	NA	**580**	**584**
Mercury	1.1	4.6	0.0033	mg/kg	NA	0.022	0.018	NA	0.031	NA	0.029	0.018
Nickel	**150**	2200	2.6	mg/kg	NA	9.1	12.1	NA	26.3	NA	10.8	12.1
Potassium	--	--	--	mg/kg	NA	386 J+	702 J+	NA	1510	NA	1180	1260
Selenium	39	580	0.052	mg/kg	NA	0.25 U	0.24 U	NA	0.48 U	NA	0.41 U	0.42 U
Silver	39	580	0.08	mg/kg	NA	0.52 U	0.51 U	NA	0.95 U	NA	0.81 U	0.82 U
Sodium	--	--	--	mg/kg	NA	35.8 U	35.4 J	NA	48.3 U	NA	41.3 U	42.1 U
Thallium	**0.078**	1.2	0.0014	mg/kg	NA	0.1 U	0.1 U	NA	0.19 U	NA	0.17 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	NA	5.7	6.9	NA	19.2 J	NA	13.5 J	19.6 J
Zinc	2300	35000	37	mg/kg	NA	26.3	38.1	NA	76.7	NA	49.4	53.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-050	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-054
				Sample Date:	6/22/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	6/20/2016
				Sample Depth (ft-bls):	10 - 12	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	59 - 64	0 - 0.5
				Sample Designation:	CFMW-050-SO-10-12	CFMW-DUP22-SO	CFMW-053a-SO-0-0.5	CFMW-053a-SO-0-0.5Pb	CFMW-053a-SO-0.5-2	CFMW-053a-SO-10-12	CFMW-053a-SO-59-64	CFMW-054-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**9180**	**11900**	**14500**	NA	**13100**	**8720**	NA	**18600**
Antimony	3.1	47	0.035	mg/kg	0.44 U	0.43 U	0.47 U	NA	0.42 U	0.36 UJ	NA	0.43 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.5**	**4.6**	**5.5**	NA	**4.4**	**3.1**	NA	**6**
Barium	1500	22000	16	mg/kg	84.6	213	259	NA	168	110	NA	104 J
Beryllium	**16**	230	1.9	mg/kg	0.42 J	0.48	0.54	NA	0.52	0.37	NA	0.61
Cadmium	**7.1**	98	0.069	mg/kg	0.33 U	0.33 U	0.35 U	NA	0.32 U	0.27 U	NA	0.33 U
Calcium	--	--	--	mg/kg	36100	42200 J	4510 J	NA	16500 J	55900	NA	3640 J
Chromium	--	--	--	mg/kg	10.7	10.8	8.9	NA	9.7	12.3	NA	11.3 J
Cobalt	**2.3**	35	0.027	mg/kg	**6.2**	**5.4**	**6.7**	NA	**5.3**	**4.9**	NA	**6.2**
Copper	**310**	4700	2.8	mg/kg	32.6 J	14.4	14.9	NA	14.2	16.6 J-	NA	13.7
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.017 U	0.04 J	0.19	NA	0.038 J	0.033 J	0.097 J	0.027 J
Iron	**5500**	82000	35	mg/kg	**15700**	**15000**	**16400**	NA	**14400**	**14400**	NA	**19700**
Lead	400	800	--	mg/kg	8.6	10.3 J+	12.2 J+	17.2	10.2 J+	6.6	NA	9.1 J
Magnesium	--	--	--	mg/kg	12200	12400 J	7140 J	NA	8490 J	15900	NA	11000
Manganese	**180**	2600	2.8	mg/kg	**448**	**552**	**1270**	NA	**458**	**376**	NA	**413**
Mercury	1.1	4.6	0.0033	mg/kg	0.017	0.029	0.019	NA	0.023	0.022	NA	0.021
Nickel	**150**	2200	2.6	mg/kg	11.4	10.7	13.9	NA	10.4	11.3	NA	15
Potassium	--	--	--	mg/kg	651	796	929	NA	746	1070 J+	NA	1070
Selenium	39	580	0.052	mg/kg	0.41 U	0.4 U	0.44 U	NA	0.39 U	0.33 U	NA	0.41 U
Silver	39	580	0.08	mg/kg	0.8 U	0.79 U	0.85 U	NA	0.77 U	0.65 U	NA	0.79 U
Sodium	--	--	--	mg/kg	41 U	54.2 J	214	NA	44.7 J	59.7 J	NA	676
Thallium	**0.078**	1.2	0.0014	mg/kg	0.17 U	0.16 U	0.18 U	NA	0.16 U	**0.13 J**	NA	0.16 U
Vanadium	**39**	580	8.6	mg/kg	10.3 J	11.6	15	NA	12.2	7.9	NA	14.5
Zinc	2300	35000	37	mg/kg	39.5	43.1	49.5	NA	45.3	31.5	NA	52.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MTDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-054	CFMW-054	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-056a
				Sample Date:	6/20/2016	6/20/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	37 - 42
				Sample Designation:	CFMW-054-SO-0.5-2	CFMW-054-SO-10-12	CFMW-DUP20-SO	CFMW-056a-SO-0-0.5	CFMW-056a-SO-0-0.5Pb	CFMW-056a-SO-0.5-2	CFMW-056a-SO-10-12	CFMW-056a-SO-37-42
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**17200**	7550	**19100**	**19700**	NA	**19500**	7250	NA
Antimony	3.1	47	0.035	mg/kg	0.42 UJ	0.4 UJ	0.44 UJ	0.47 UJ	NA	0.4 UJ	0.41 UJ	NA
Arsenic	**0.68**	3	0.0015	mg/kg	**5.4**	**2.9**	**5.8**	**6.4**	NA	**5.7**	**3.3**	NA
Barium	1500	22000	16	mg/kg	92.7 J	166 J	221	230	NA	218	44.9	NA
Beryllium	**16**	230	1.9	mg/kg	0.53	0.29 J	0.69	0.7	NA	0.58	0.45	NA
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	0.3 U	0.33 U	0.36 U	NA	0.3 U	0.31 U	NA
Calcium	--	--	--	mg/kg	2400 J	45900 J	5520 J	5740 J	NA	2710 J	20300 J	NA
Chromium	--	--	--	mg/kg	12.3 J	17.3 J	12.5	12.6	NA	11.2	9.3	NA
Cobalt	**2.3**	35	0.027	mg/kg	**5.7**	**4.1**	**6.3**	**6.7**	NA	**6.6**	**4.8**	NA
Copper	**310**	4700	2.8	mg/kg	13.9	9.8	19.1	20	NA	11.5	9.9	NA
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.028 J	0.016 U	0.18	0.22	NA	0.022 J	0.017 U	0.032 J
Iron	**5500**	82000	35	mg/kg	**17900**	**12100**	**17200**	**17700**	NA	**18500**	**12000**	NA
Lead	400	800	--	mg/kg	9.4 J	4.6 J	12	13.1	13.6	9.6	4.2	NA
Magnesium	--	--	--	mg/kg	11200	13900	8090	8450	NA	7640	8750	NA
Manganese	**180**	2600	2.8	mg/kg	**344**	**301**	**549**	**588**	NA	**410**	**285**	NA
Mercury	1.1	4.6	0.0033	mg/kg	0.022	0.014 J	0.028	0.031	NA	0.012 J	0.011 J	NA
Nickel	**150**	2200	2.6	mg/kg	15.7	8.4	13.1	14.3	NA	12.2	9.3	NA
Potassium	--	--	--	mg/kg	971	1310	1090	1120	NA	751	870	NA
Selenium	39	580	0.052	mg/kg	0.39 U	0.37 U	0.58 J	0.57 J	NA	0.37 U	0.39 U	NA
Silver	39	580	0.08	mg/kg	0.77 U	0.73 U	0.8 U	0.86 U	NA	0.73 U	0.76 U	NA
Sodium	--	--	--	mg/kg	622	106	49.6 J	158 J	NA	57.4 J	75.6 J	NA
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.15 U	0.16 U	0.18 U	NA	0.15 U	0.16 U	NA
Vanadium	**39**	580	8.6	mg/kg	12.4	7.5	12.5	13.8	NA	13.5	9.5	NA
Zinc	2300	35000	37	mg/kg	51.2	27.3	84.2	89	NA	48.7	29.5	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-057a	CFMW-057a	CFMW-057a	CFMW-057a	CFMW-059a	CFMW-059a	CFMW-059a	CFMW-059a
				Sample Date:	7/27/2016	7/27/2016	7/27/2016	7/27/2016	7/22/2016	7/22/2016	7/22/2016	7/22/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	30 - 35	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFMW-057a-SO-0-0.5	CFMW-057a-SO-0.5-2	CFMW-057a-SO-10-12	CFMW-057a-SO-30-35	CFMW-059a-SO-0-0.5	CFMW-059a-SO-0-0.5Pb	CFMW-059a-SO-0.5-2	CFMW-059a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**14200**	**15400**	4920	NA	**16600**	NA	**14700**	7030
Antimony	3.1	47	0.035	mg/kg	0.35 UJ	0.36 UJ	0.34 UJ	NA	0.47 U	NA	0.41 U	0.41 U
Arsenic	**0.68**	3	0.0015	mg/kg	**4**	**3.7**	**2.3**	NA	**3.8 J+**	NA	**4.7 J+**	**4.6 J+**
Barium	1500	22000	16	mg/kg	170	137	41.2	NA	218	NA	176	52.1
Beryllium	**16**	230	1.9	mg/kg	0.51	0.55	0.21 J	NA	0.61 J	NA	0.53 J	0.77 J
Cadmium	**7.1**	98	0.069	mg/kg	0.27 U	0.28 U	0.26 U	NA	0.35 U	NA	0.31 U	0.31 U
Calcium	--	--	--	mg/kg	2440 J+	1470 J+	1820 J+	NA	2500 J	NA	1800 J	39900 J
Chromium	--	--	--	mg/kg	8.3	8.6	12.6	NA	7.3	NA	8.7	7.8
Cobalt	**2.3**	35	0.027	mg/kg	**5.4**	**5.8**	**4.6**	NA	**5.4**	NA	**4.7**	**3.8**
Copper	**310**	4700	2.8	mg/kg	11.2	11.3	12.4	NA	13.9 J+	NA	13.1 J+	12 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.086 J	0.022 J	0.017 J	0.02 U	0.057 J	NA	0.034 J	0.026 J
Iron	**5500**	82000	35	mg/kg	**14000**	**14700**	**8160**	NA	**13100**	NA	**13600**	**11900**
Lead	400	800	--	mg/kg	9.6	8.1	3.6	NA	9.3 J+	11.7	8.9 J+	5.4 J+
Magnesium	--	--	--	mg/kg	5840	6320	5320	NA	4660	NA	6780	13400
Manganese	**180**	2600	2.8	mg/kg	**682**	**367**	**211**	NA	**499**	NA	**376**	**293**
Mercury	1.1	4.6	0.0033	mg/kg	0.012 U	0.012 U	0.013 U	NA	0.022	NA	0.017 J	0.022
Nickel	**150**	2200	2.6	mg/kg	10.4	10.6	13.4	NA	8.9	NA	8.9	8.5
Potassium	--	--	--	mg/kg	1140	982	574	NA	768	NA	651	604
Selenium	39	580	0.052	mg/kg	0.33 U	0.34 U	0.31 U	NA	0.44 U	NA	0.38 U	0.38 U
Silver	39	580	0.08	mg/kg	0.65 U	0.67 U	0.61 U	NA	0.86 U	NA	0.74 U	0.75 U
Sodium	--	--	--	mg/kg	34.6 J	45.2 J	40.3 J	NA	80.2 J	NA	71.9 J	50.9 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.14 U	0.13 U	NA	0.18 U	NA	0.15 U	0.15 U
Vanadium	**39**	580	8.6	mg/kg	13.9	16.7	8.3	NA	14.2	NA	12.6	5.9
Zinc	2300	35000	37	mg/kg	63.8	39.8	18.1	NA	38.9	NA	31.3	27

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFMW-059a	CFMW-061	CFMW-061	CFMW-061	CFMW-061	CFMW-064	CFMW-064	CFMW-064
					Sample Date:	7/23/2016	7/12/2016	7/12/2016	7/12/2016	7/12/2016	7/11/2016	7/11/2016	7/11/2016
					Sample Depth (ft-bls):	79 - 84	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2
					Sample Designation:	CFMW-059a-SO-79-84	CFMW-061-SO-0-0.5	CFMW-061-SO-0-0.5Pb	CFMW-061-SO-0.5-2	CFMW-061-SO-10-12	CFMW-064-SO-0-0.5	CFMW-064-SO-0-0.5Pb	CFMW-064-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg	NA	**8430**	NA	**10500**	6980	**10000**	NA	**8810**
Antimony	3.1	47	0.035	mg/kg	NA	0.4 U	NA	0.41 U	0.41 U	0.48 U	NA	0.42 U
Arsenic	**0.68**	3	0.0015	mg/kg	NA	**3.5**	NA	**4.5**	**3.3**	**4.6**	NA	**4.6**
Barium	1500	22000	16	mg/kg	NA	74	NA	85.7	87.9	98.7	NA	85.9
Beryllium	**16**	230	1.9	mg/kg	NA	0.38 J	NA	0.43	0.36 J	0.4 J	NA	0.4 J
Cadmium	**7.1**	98	0.069	mg/kg	NA	0.31 U	NA	0.31 U	0.31 U	0.37 U	NA	0.32 U
Calcium	--	--	--	mg/kg	NA	7410	NA	33900	13800	9450	NA	13200
Chromium	--	--	--	mg/kg	NA	8	NA	10.1	12.5	9.7	NA	10.2
Cobalt	**2.3**	35	0.027	mg/kg	NA	**4.7**	NA	**4.8**	**5**	**5.7**	NA	**6.1**
Copper	**310**	4700	2.8	mg/kg	NA	13.9	NA	19.2	14.3	18.3	NA	14.7
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.019 U	0.061 J	NA	0.062 J	0.018 U	0.17	NA	0.042 J
Iron	**5500**	82000	35	mg/kg	NA	**11300**	NA	**14200**	**12800**	**14100**	NA	**15800**
Lead	400	800	--	mg/kg	NA	8.9	15.2	8.9	5.1	12.4	10.4	8.1
Magnesium	--	--	--	mg/kg	NA	8370	NA	11600	8890	8460	NA	10300
Manganese	**180**	2600	2.8	mg/kg	NA	**332**	NA	**355**	**244**	**359**	NA	**284**
Mercury	1.1	4.6	0.0033	mg/kg	NA	0.023	NA	0.032	0.014 J	0.049	NA	0.025
Nickel	**150**	2200	2.6	mg/kg	NA	12.7	NA	11.7	11	18.1	NA	12.8
Potassium	--	--	--	mg/kg	NA	638	NA	749	645	1050	NA	818
Selenium	39	580	0.052	mg/kg	NA	0.38 U	NA	0.39 U	0.39 U	0.45 U	NA	0.4 U
Silver	39	580	0.08	mg/kg	NA	0.74 U	NA	0.76 U	0.75 U	0.88 U	NA	0.77 U
Sodium	--	--	--	mg/kg	NA	37.6 U	NA	38.7 U	58.5 J	45.2 U	NA	39.5 U
Thallium	**0.078**	1.2	0.0014	mg/kg	NA	0.15 U	NA	0.16 U	0.16 U	0.18 U	NA	0.16 U
Vanadium	**39**	580	8.6	mg/kg	NA	9.3	NA	10.2	10.9	15.1	NA	16.2
Zinc	2300	35000	37	mg/kg	NA	37.4	NA	41.7	33.6	49.8	NA	41.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-064	CFSB-001	CFSB-001	CFSB-001	CFSB-002	CFSB-002	CFSB-002	CFSB-003	CFSB-003
			Sample Date:	7/11/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
			Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFMW-064-SO-10-12	CFSB-001-SO-0-0.5	CFSB-001-SO-0.5-2	CFSB-001-SO-10-12	CFSB-002-SO-0-0.5	CFSB-002-SO-0.5-2	CFSB-002-SO-10-12	CFSB-003-SO-0-0.5	CFSB-003-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	7660	**20400**	**10100**	6850	**10500**	**11600**	**8420**	**15900**	**12100**
Antimony	3.1	47	0.035	mg/kg	0.43 U	0.44 U	0.37 U	0.32 U	0.37 U	0.4 U	0.34 U	0.4 UJ	0.37 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.2**	**7.3**	**3.2**	**4**	**5.2**	**5.3**	**6.9**	**7.9 J**	**12 J**
Barium	1500	22000	16	mg/kg	82.1	265	75.6	45.1	90.2	62.7	47.3	121	76.5
Beryllium	**16**	230	1.9	mg/kg	0.31 J	0.81	0.4	0.36	0.4	0.54	0.32 J	0.49	0.43
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	0.33 U	0.28 U	0.24 U	0.28 U	0.31 U	0.26 U	0.3 U	0.28 U
Calcium	--	--	--	mg/kg	28800	6020	6770	60400	10600	24800	63500	7630	38600
Chromium	--	--	--	mg/kg	11.3	12.5	8.2	9.6	7.8	9.9	10.1	12.5	10.5
Cobalt	**2.3**	35	0.027	mg/kg	**5.2**	**6**	**4.1**	**4**	**4.3**	**5.2**	**4.4**	**6.7 J-**	**6.1 J-**
Copper	**310**	4700	2.8	mg/kg	15.8	21.8	8.9	6.3	**7260**	34	16.6	17.7 J+	20.5 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.044 J	0.39	0.046 J	0.016 U	0.1 J	0.1 J	0.015 U	0.078 J	0.038 J
Iron	**5500**	82000	35	mg/kg	**14100**	**16200**	**11100**	**11200**	**11500**	**14800**	**12500**	**18800**	**16000**
Lead	400	800	--	mg/kg	7	18.5	9.1	4.9	10.5	11.1	21.3	12.1 J	13.4 J
Magnesium	--	--	--	mg/kg	16900	9090	7940	20000	9420	12700	15500	14100	14200
Manganese	**180**	2600	2.8	mg/kg	**280**	**521**	**331**	**363**	**385**	**436**	**390**	**443**	**397**
Mercury	1.1	4.6	0.0033	mg/kg	0.022	0.021	0.017 J	0.032	0.026	0.026	0.012 U	0.015 U	0.012 U
Nickel	**150**	2200	2.6	mg/kg	11.5	18.4	10.5	7.6	11.2	12.7	8.9	17	12.3
Potassium	--	--	--	mg/kg	810	1310	593	682	828	795	678	1400 J+	1060 J+
Selenium	39	580	0.052	mg/kg	0.4 U	0.67 J	0.34 U	0.3 U	0.35 U	0.38 U	0.32 U	0.37 U	0.34 U
Silver	39	580	0.08	mg/kg	0.78 U	0.8 U	0.67 U	0.59 U	0.68 U	0.74 U	0.63 U	0.73 U	0.67 U
Sodium	--	--	--	mg/kg	48.9 J	104 J	38.1 J	31.3 J	34.7 U	37.6 U	32 U	37.2 J	34.3 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.16 U	0.14 U	0.12 U	0.14 U	0.15 U	0.13 U	0.15 U	0.14 U
Vanadium	**39**	580	8.6	mg/kg	14.4	15.6	8.3	4.8	9.3	8.1	5.7	11.2	9.2
Zinc	2300	35000	37	mg/kg	35.1	66.8	50.4	31.6	40.9	40.9	35.7	58.1	44.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-003	CFSB-004	CFSB-004	CFSB-004	CFSB-005	CFSB-005	CFSB-005	CFSB-006	CFSB-006
					Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
					Sample Designation:	CFSB-003-SO-10-12	CFSB-004-SO-0-0.5	CFSB-004-SO-0.5-2	CFSB-004-SO-10-12	CFSB-005-SO-0-0.5	CFSB-005-SO-0.5-2	CFSB-005-SO-10-12	CFSB-006-SO-0-0.5	CFSB-006-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg		**8230**	**8890**	**8960**	**8160**	**11300**	**13200**	6930	7200	**8230**
Antimony	3.1	47	0.035	mg/kg		0.34 UJ	0.34 U	0.36 U	0.33 U	0.38 UJ	0.38 UJ	0.35 UJ	0.32 UJ	0.39 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.1 J**	**4.4**	**3.7**	**3.7**	**5.6 J**	**3.7 J**	**3.4 J**	**3.6**	**4**
Barium	1500	22000	16	mg/kg		85.6	77.7	204	37.2	111	102	69	77.4	112
Beryllium	**16**	230	1.9	mg/kg		0.35	0.44	0.42	0.3 J	0.48	0.47	0.28 J	0.36	0.28 J
Cadmium	**7.1**	98	0.069	mg/kg		0.25 U	0.26 U	0.78 J	0.25 U	0.29 U	0.29 U	0.27 U	0.24 U	0.3 U
Calcium	--	--	--	mg/kg		35600	39100	14100	35000	86800	17000	22600	34300	23400
Chromium	--	--	--	mg/kg		10	9.6	9.5	7.3	8.9	13.2	8.7	7.7	7.2
Cobalt	**2.3**	35	0.027	mg/kg		**5.4 J-**	**4.1**	**4.2**	**3.6**	**4.1 J-**	**11.7 J-**	**4.3 J-**	**4.4**	**8**
Copper	**310**	4700	2.8	mg/kg		11.1 J+	11.8	13.9	9.4	12.5 J+	13.7 J+	10.3 J+	9.1	8.9 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.016 U	0.25	0.6	0.11	0.21	0.026 J	0.017 U	0.016 U	0.11 J
Iron	**5500**	82000	35	mg/kg		**14100**	**10900**	**13400**	**10300**	**12900**	**25000**	**10400**	**12000**	**10700**
Lead	400	800	--	mg/kg		5.8 J	18.1	16.6	5.6	12.4 J	7.7 J	5.4 J	6.1 J+	7.1
Magnesium	--	--	--	mg/kg		13300	7820	7930	11500	15600	13400	8570	12000	13300
Manganese	**180**	2600	2.8	mg/kg		**326**	**361**	**886**	**293**	**446**	**433**	**341**	**313**	**348**
Mercury	1.1	4.6	0.0033	mg/kg		0.012 U	0.013 U	0.012 U	0.012 J	0.013 U	0.013 U	0.012 U	0.025	0.015 J
Nickel	**150**	2200	2.6	mg/kg		12.1	10.7	13.8	7.6	14.6	13.9	9.1	9.3 J	10.5
Potassium	--	--	--	mg/kg		665 J+	772	842	561	1060 J+	1150 J+	754 J+	541 J	818 J+
Selenium	39	580	0.052	mg/kg		0.31 U	0.32 U	0.35 J	0.31 U	0.36 U	0.35 U	0.33 U	0.3 U	0.37 U
Silver	39	580	0.08	mg/kg		0.61 U	0.62 U	0.65 U	0.6 U	0.7 U	0.69 U	0.64 U	0.58 U	0.72 U
Sodium	--	--	--	mg/kg		33.2 J	31.7 U	48.2 J	30.8 U	49.5 J	35.2 U	32.9 U	29.7 U	36.8 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.13 U	0.13 U	**0.14 J**	0.12 U	0.14 U	0.14 U	0.13 U	0.12 U	0.15 U
Vanadium	**39**	580	8.6	mg/kg		6.9	8.1	10.5	5.2	10.6	20.7	6.2	6.2	6.4
Zinc	2300	35000	37	mg/kg		38.2	63.2	113	33.6	44.3	63.2	29	33.6	38.2

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-006	CFSB-007	CFSB-007	CFSB-007	CFSB-008	CFSB-008	CFSB-008	CFSB-008	CFSB-009
			Sample Date:	5/23/2016	5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016
			Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFSB-006-SO-10-12	CFSB-007-SO-0-0.5	CFSB-007-SO-0.5-2	CFSB-007-SO-10-12	CFSB-008-SO-0-0.5	CFSB-008-SO-0.5-2	CFSB-DUP4-SO	CFSB-008-SO-10-12	CFSB-009-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**14300**	**12600**	**10200**	**9810**	**15100**	**7990**	**11800**	6980	**11400**
Antimony	3.1	47	0.035	mg/kg	0.37 UJ	0.38 UJ	0.36 UJ	0.33 UJ	0.39 UJ	0.37 UJ	0.37 UJ	0.33 UJ	0.43 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**8.4**	**4.4 J**	**3.1 J**	**5.6 J**	**11.8**	**7.2**	**11.8**	**4.1**	**7.1**
Barium	1500	22000	16	mg/kg	61.3	109	90.9	54.2	105	41.7	62.1	55.1	117
Beryllium	**16**	230	1.9	mg/kg	0.38	0.51	0.39	0.38	0.65	0.24 J	0.4	0.31 J	0.55
Cadmium	**7.1**	98	0.069	mg/kg	0.28 U	0.29 U	0.28 U	0.25 U	0.29 U	0.28 U	0.28 U	0.25 U	0.32 U
Calcium	--	--	--	mg/kg	16600	20500	3990	60200	2090	49600 J	1210 J	52800	19400
Chromium	--	--	--	mg/kg	12.7	10.8	8.7	10.5	10.4	8.7	7.9	6.4	12.2
Cobalt	**2.3**	35	0.027	mg/kg	**8**	**5.6 J-**	**5.3 J-**	**7.4 J-**	**5.5**	**5**	**4**	**4.5**	**5.4**
Copper	**310**	4700	2.8	mg/kg	12.5	15.1 J+	14.2 J+	8.9 J+	10.8	8.2 J	19.6 J	8.6 J+	14.5
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.041 J	0.095 J	0.029 J	0.017 U	0.02 J	0.036 J	0.02 J	0.017 U	0.078 J
Iron	**5500**	82000	35	mg/kg	**17900**	**14300**	**12100**	**16100**	**17900**	**10400**	**12000**	**9300**	**14300**
Lead	400	800	--	mg/kg	13.3 J+	9.9 J	6.9 J	7.8 J	11.6	19 J	84.2 J	6.4	11 J+
Magnesium	--	--	--	mg/kg	15800	10100	7430	17600	11000	9670	8450	12500	10500
Manganese	**180**	2600	2.8	mg/kg	**342**	**437**	**302**	**580**	**419**	**557 J**	147 J	**344**	**337**
Mercury	1.1	4.6	0.0033	mg/kg	0.029	0.017 J	0.013 U	0.013 J+	0.017 J	0.04	0.067	0.012 J	0.026
Nickel	**150**	2200	2.6	mg/kg	17.7 J	16.3	10.3	11.7	13.6 J	8.7 J	7.9 J	7.7	10.6 J
Potassium	--	--	--	mg/kg	684 J	1230 J+	858 J+	945 J+	1340 J	613 J	883 J	596 J+	864 J
Selenium	39	580	0.052	mg/kg	0.35 U	0.36 U	0.34 U	0.31 U	0.36 U	0.34 U	0.35 U	0.31 U	0.4 U
Silver	39	580	0.08	mg/kg	0.68 U	0.7 U	0.66 U	0.61 U	0.71 U	0.67 U	0.68 U	0.61 U	0.78 U
Sodium	--	--	--	mg/kg	34.9 U	45.5 J	45.2 J	35.4 J	36.2 U	34.3 U	34.6 U	31 U	57.7 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.14 U	0.14 U	0.14 U	0.13 U	0.15 U	0.14 U	0.14 U	0.13 U	0.16 U
Vanadium	**39**	580	8.6	mg/kg	10.4	11.7	10	8.5	15.3	6.9	7.5	5	9.9
Zinc	2300	35000	37	mg/kg	42.4	46.2	35.7	45	39.6	39.6	27.9	30.1	44.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-009	CFSB-009	CFSB-009	CFSB-010	CFSB-010	CFSB-011	CFSB-011	CFSB-011	CFSB-012
				Sample Date:	5/23/2016	5/23/2016	5/24/2016	5/21/2016	5/21/2016	5/19/2016	5/19/2016	5/19/2016	5/28/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2
				Sample Designation:	CFSB-009-SO-0.5-2	CFSB-009-SO-10-12	CFSB-DUP6-SO	CFSB-010-SO-0.5-2	CFSB-010-SO-10-12	CFSB-011-SO-0-0.5	CFSB-011-SO-0.5-2.0	CFSB-011-SO-10-12	CFSB-012-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**10400**	**11000**	**20000**	**7780**	7310	**16400**	**14400 J**	7460	**9400**
Antimony	3.1	47	0.035	mg/kg	0.36 UJ	0.41 UJ	0.47 UJ	0.45 UJ	0.43 UJ	0.48 UJ	0.36 U	0.4 UJ	0.33 U
Arsenic	**0.68**	3	0.0015	mg/kg	**3.7**	**3.1**	**5.2**	**4.5 J**	**3.1 J**	**5.2**	**6.1 J**	**3.3**	**3.9 J**
Barium	1500	22000	16	mg/kg	75.7	132	319	83.7	121	253 J+	195	102 J+	82.6 J
Beryllium	**16**	230	1.9	mg/kg	0.47	0.44	0.85	0.32 J	0.33 J	0.58	0.53	0.3 J	0.42
Cadmium	**7.1**	98	0.069	mg/kg	0.27 U	0.31 U	0.36 U	0.34 U	0.32 U	0.37 U	0.27 U	0.31 U	0.25 U
Calcium	--	--	--	mg/kg	5920	11900	7550 J	16400 J	28800 J	3070	3300	4290	27400 J
Chromium	--	--	--	mg/kg	8	8.5	18	8.3	12.1	10.9	13.5	9.6	9 J
Cobalt	**2.3**	35	0.027	mg/kg	**4.1**	**3.8**	**6.3**	**5.1**	**4.6**	**6.6**	**6**	**3.9**	**5.5**
Copper	**310**	4700	2.8	mg/kg	10.1	11.4	24.7 J+	19 J+	11.2 J+	13.1	20.6 J	10	15.7
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.018 U	0.14	0.33	0.046 J	0.024 J	0.12 J	0.044 J	0.022 J	0.13 J-
Iron	**5500**	82000	35	mg/kg	**11300**	**11100**	**16400**	**12900**	**12600**	**17000**	**17100**	**9590**	**13800**
Lead	400	800	--	mg/kg	8.2 J+	6.4 J+	17.1	11.4 J	5.4 J	10.4	11.1	5.9	7.4
Magnesium	--	--	--	mg/kg	7900	8630	12600	8730 J	9810 J	7080	8700	6000	13100 J
Manganese	**180**	2600	2.8	mg/kg	168	**281**	**333**	**388**	**336**	**457**	**453 J**	**359**	**442 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.015 J	0.024	0.045	0.032	0.014 J	0.02	0.014 J	0.018	0.024
Nickel	**150**	2200	2.6	mg/kg	9.4 J	8.1 J	13.2	9 J+	10 J+	12.2	11.2	8	10.4 J
Potassium	--	--	--	mg/kg	643 J	643 J	1270 J+	695 J	663 J	1120	1140	536	819 J
Selenium	39	580	0.052	mg/kg	0.34 U	0.38 U	1.2 J	0.42 U	0.4 U	0.5 J	0.42 J	0.38 U	0.31 U
Silver	39	580	0.08	mg/kg	0.66 U	0.74 U	0.86 U	0.83 U	0.78 U	0.88 U	0.66 U	0.74 U	0.61 U
Sodium	--	--	--	mg/kg	37.7 J	135	81.6 J	78.5 J	47.5 J	64.6 J	45.5 J	46.2 J	38.7 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.14 U	0.15 U	0.18 U	0.17 U	0.16 U	0.18 U	0.14 U	0.15 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	8.1	6.4	13	8.8	9	11	12.6	6	9.1 J
Zinc	2300	35000	37	mg/kg	37	34.3	58.6	37.7 J	30.9 J	70.8	57.3	31.5	34.6

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-012	CFSB-013	CFSB-013	CFSB-013	CFSB-014	CFSB-014	CFSB-014	CFSB-016	CFSB-016
				Sample Date:	5/28/2016	5/19/2016	5/19/2016	5/19/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-012-SO-10-12	CFSB-013-SO-0-0.5	CFSB-013-SO-0.5-2.0	CFSB-013-SO-10-12	CFSB-014-SO-0-0.5	CFSB-014-SO-0.5-2	CFSB-014-SO-10-12	CFSB-016-SO-0-0.5	CFSB-016-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**8110**	**16900 J**	**13900 J**	6240 J	**14600 J**	**12500 J**	7050 J	**36200**	**19000 J**
Antimony	3.1	47	0.035	mg/kg	0.35 U	0.39 UJ	0.4 UJ	0.32 UJ	0.48 UJ	0.46 UJ	0.42 UJ	0.7 UJ	0.56 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**3.7 J**	**5.3 J**	**5.8 J**	**2.8 J**	**8.5 J**	**6.8 J**	**4.3 J**	**14.1**	**13.3 J**
Barium	1500	22000	16	mg/kg	62.7 J	267	222	68.9	256 J	140 J	71.1 J	228	166 J
Beryllium	**16**	230	1.9	mg/kg	0.33 J	0.59	0.52	0.33	0.75	1.1	0.3 J	3.4	1.2
Cadmium	**7.1**	98	0.069	mg/kg	0.26 U	0.29 U	0.3 U	0.25 U	0.68 J	0.69 J	0.32 U	2.5	1.1 J
Calcium	--	--	--	mg/kg	35900 J	4240	3790	7110	19200	9380	18100	9990	13200
Chromium	--	--	--	mg/kg	14 J	8.9	9.2	9.7	18.3 J	22.6 J	10.8 J	20.9	18.5 J
Cobalt	**2.3**	35	0.027	mg/kg	**5.2**	**5.6**	**4.8**	**6.3**	**6**	**5.5**	**4.9**	**7.8**	**5.9**
Copper	**310**	4700	2.8	mg/kg	14.4	12.5 J	12.1 J	9.4 J	35	40.7	17.5	59.4	25.6
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.017 UJ	0.23	0.17	0.018 U	**6.8**	0.078 J	0.02 U	**8.3**	0.76
Iron	**5500**	82000	35	mg/kg	**13100**	**14000**	**13300**	**12900**	**13500 J**	**12000 J**	**12300 J**	**15400**	**23600 J**
Lead	400	800	--	mg/kg	4.7	10.2	9	5.4	14.6 J	12.2 J	7.3 J	43.1	14.7 J
Magnesium	--	--	--	mg/kg	12000 J	5750	5980	7520	10200	8090	9070	9260	21800
Manganese	**180**	2600	2.8	mg/kg	**371 J**	**518 J**	**554 J**	**855 J**	**408 J**	**429 J**	**327 J**	113	**425 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.015	0.032	0.025	0.012 U	0.015 U	0.014 U	0.013 U	0.04	0.034
Nickel	**150**	2200	2.6	mg/kg	10.5 J	10.1	9.1	9.4	73.4	67.9	10.2	**171**	63.1
Potassium	--	--	--	mg/kg	752 J	1020	903	619	559	599	641	790	1040
Selenium	39	580	0.052	mg/kg	0.33 U	0.41 J	0.43 J	0.3 U	0.45 U	0.43 U	0.39 U	0.75 J	0.52 U
Silver	39	580	0.08	mg/kg	0.64 U	0.71 U	0.73 U	0.59 U	0.88 U	0.83 U	0.76 U	1.3 U	1 U
Sodium	--	--	--	mg/kg	71.9 J	39.5 J	37 U	30.3 U	67.6 J	73.2 J	38.9 U	144 J	64.2 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.15 U	0.15 U	0.12 U	0.18 U	**0.17 J**	0.16 U	**0.38 J**	**0.28 J**
Vanadium	**39**	580	8.6	mg/kg	10 J	11	9.8	7.1	26.1 J	25.4 J	6.9 J	**54.2**	29.6 J
Zinc	2300	35000	37	mg/kg	33	61.3	51.7	33	148 J	128 J	32.4 J	265	104 J

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-016	CFSB-019	CFSB-019	CFSB-019	CFSB-019	CFSB-021	CFSB-021	CFSB-021	CFSB-022
					Sample Date:	6/2/2016	6/4/2016	6/4/2016	6/4/2016	6/13/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-016-SO-10-12	CFSB-019-SO-0-0.5	CFSB-019-SO-0.5-2	CFSB-DUP13-SO	CFSB-019-SO-10-12	CFSB-021-SO-0-0.5	CFSB-021-SO-0.5-2	CFSB-021-SO-10-12	CFSB-022-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg		5850	**27400**	**19300 J**	**7930 J**	5590	**13600**	7000	**8230**	**8720**
Antimony	3.1	47	0.035	mg/kg		0.44 UJ	0.39 UJ	0.37 UJ	0.38 UJ	0.34 UJ	0.37 UJ	0.32 UJ	0.35 UJ	0.38 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.3**	**9**	**7.4 J**	**3.8 J**	**1.7**	**6.7**	**2.8**	**4.3**	**6.7**
Barium	1500	22000	16	mg/kg		46.1	138	93.8	85.6	36.3	72.3	99.9	47.3	91
Beryllium	**16**	230	1.9	mg/kg		0.23 J	1.2	0.98 J	0.39 J	0.21 J	0.45	0.3 J	0.26 J	0.38
Cadmium	**7.1**	98	0.069	mg/kg		0.34 U	1.8	1.1 J	0.29 UJ	0.26 U	0.28 U	0.24 U	0.27 U	0.29 U
Calcium	--	--	--	mg/kg		21500	2630	16900 J	39300 J	38500 J	1770	87500	78200	18000
Chromium	--	--	--	mg/kg		6.5	19.7	15.4	10.8	5.9	11.2	6.5	7.8	7.7
Cobalt	**2.3**	35	0.027	mg/kg		**4**	**7.4**	**7.1**	**5.7**	**3**	**5**	**3.5**	**3.6**	**3.9**
Copper	**310**	4700	2.8	mg/kg		8.7	36.2 J	36.1 J	202 J	4.3	11.6	19.1	13.1	8.8
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.02 J	1.3	1.2 J	0.1 J	0.024 J	0.048 J	0.021 J	0.017 U	0.035 J
Iron	**5500**	82000	35	mg/kg		**9950**	**12100**	**12600**	**11900**	**8480**	**16800**	**9060**	**11100**	**14700**
Lead	400	800	--	mg/kg		5.4	28.4 J	19 J	13.4 J	3.1 J+	9.8 J+	8.4 J+	8.4 J+	19.3 J+
Magnesium	--	--	--	mg/kg		8830	6660	9410	10300	7280	12000	11700	11100	11500
Manganese	**180**	2600	2.8	mg/kg		**237**	**232**	**204 J**	**361 J**	**204 J**	156	**320**	**283**	**471**
Mercury	1.1	4.6	0.0033	mg/kg		0.027	0.025	0.022	0.014 U	0.012 U	0.015 U	0.024	0.015 J	0.035
Nickel	**150**	2200	2.6	mg/kg		7.3	**153**	99.9 J	12.5 J	6.2 J+	12.4 J	7.8 J	7.8 J	8.9 J
Potassium	--	--	--	mg/kg		505	920 J+	976 J+	833 J+	468	1010 J	561 J	631 J	1020 J
Selenium	39	580	0.052	mg/kg		0.42 U	1 J	0.66 J	0.35 U	0.32 U	0.34 U	0.3 U	0.33 U	0.35 U
Silver	39	580	0.08	mg/kg		0.81 U	0.72 U	0.68 U	0.69 U	0.62 U	0.67 U	0.58 U	0.64 U	0.69 U
Sodium	--	--	--	mg/kg		41.5 U	139	111 J	53 J	31.9 U	34.4 U	33 J	32.7 U	35.4 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.17 U	**0.27 J**	**0.14 J**	0.14 U	0.13 U	0.14 U	0.12 U	0.13 U	0.14 U
Vanadium	**39**	580	8.6	mg/kg		5.9	**60.3**	**40.7 J**	11 J	5.8 J-	12.4	5	5.8	7.6
Zinc	2300	35000	37	mg/kg		26.7	248	159 J	34.3 J	24.8 J-	44.3	29.8	31.3	48.6

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-022	CFSB-022	CFSB-025	CFSB-025	CFSB-025	CFSB-026	CFSB-026	CFSB-026	CFSB-027
				Sample Date:	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-022-SO-0.5-2	CFSB-022-SO-10-12	CFSB-025-SO-0-0.5	CFSB-025-SO-0.5-2	CFSB-025-SO-10-12	CFSB-026-SO-0-0.5	CFSB-026-SO-0.5-2	CFSB-026-SO-10-12	CFSB-027-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	7510	**10100**	**71300**	**121000**	**11100**	**106000**	**90700**	6420	**10300**
Antimony	3.1	47	0.035	mg/kg	0.37 UJ	0.31 UJ	2.6 J-	0.68 J-	0.38 UJ	1.1 J-	0.8 UJ	0.33 UJ	0.36 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.1**	**4.1**	**13.2**	**14.8**	**6.8**	**22.7**	**22.5**	**4.2**	**5.7**
Barium	1500	22000	16	mg/kg	102	46.7	166	302	77.9	461	461	56.4	82.9
Beryllium	**16**	230	1.9	mg/kg	0.36	0.29 J	3.4	7.9	0.53	**17.2**	10.6	0.22 J	0.36
Cadmium	**7.1**	98	0.069	mg/kg	0.28 U	0.24 U	3.6	5.9	0.29 U	**8.3**	4	0.25 U	0.27 U
Calcium	--	--	--	mg/kg	27800	29400	12600 J	23900 J	53000 J	68600 J	75600 J	29100 J	20400 J
Chromium	--	--	--	mg/kg	6.6	12	31.3	34.7	9.4	47.5	17.2	7.2	11.4
Cobalt	**2.3**	35	0.027	mg/kg	**3.5**	**4.9**	**27.4**	**8.3**	**5.3**	**8.7**	**5.4**	**4**	**4.7**
Copper	**310**	4700	2.8	mg/kg	10.3	7.2	55.2	11.6	9.7	6.7 J	7 J	8.1	10.9
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.072 J	0.018 U	**8.2 J**	**37.5 J**	0.46 J	**137 J**	**125 J**	0.19 J	0.19
Iron	**5500**	82000	35	mg/kg	**9860**	**13500**	**8050**	**7650**	**13300**	**6400**	4870	**9560**	**12100**
Lead	400	800	--	mg/kg	7.8 J+	6.1 J+	221 J+	130 J+	10.2 J+	238 J+	118 J+	5.3 J+	8.3 J+
Magnesium	--	--	--	mg/kg	8020	14600	1560	4740	14500	6270	5280	9500	10000
Manganese	**180**	2600	2.8	mg/kg	**478**	**455**	15.8 J	51 J	**352 J**	96.1 J	69.2 J	**259 J**	**323 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.042	0.022	0.021 U	0.025 U	0.013 U	0.028 U	0.039 J	0.012 U	0.016 J
Nickel	**150**	2200	2.6	mg/kg	7.4 J	9.9 J	**1250 J+**	**358 J+**	13.5 J+	**377 J+**	**213 J+**	9.7 J+	17.9 J+
Potassium	--	--	--	mg/kg	756 J	759 J	727	839	1350	844	1570	610	892
Selenium	39	580	0.052	mg/kg	0.35 U	0.29 U	3.3 J	1.9 J	0.38 J	1.6 J	1.2 J	0.31 U	0.34 U
Silver	39	580	0.08	mg/kg	0.68 U	0.57 U	1.1 U	1.2 U	0.69 U	1.4 U	1.5 U	0.6 U	0.66 U
Sodium	--	--	--	mg/kg	34.6 U	29.3 U	2140	603	35.3 U	831	588	30.8 U	33.8 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.14 U	0.12 U	**4.2**	**2.8**	**0.21 J**	**4.6**	**3**	0.12 U	**0.29 J**
Vanadium	**39**	580	8.6	mg/kg	5.7	7.3	**348 J-**	**109 J-**	12.7 J-	**140 J-**	**71.7 J-**	8.5 J-	13.3 J-
Zinc	2300	35000	37	mg/kg	34.6	41.8	257 J-	177 J-	42.2 J-	225 J-	281 J-	26.7 J-	42.2 J-

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-027	CFSB-027	CFSB-028	CFSB-028	CFSB-028	CFSB-029	CFSB-029	CFSB-029	CFSB-030
				Sample Date:	6/13/2016	6/13/2016	7/18/2016	7/18/2016	7/18/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-027-SO-0.5-2	CFSB-027-SO-10-12	CFSB-028-SO-0.5-2	CFSB-028-SO-0-0.5	CFSB-028-SO-10-12	CFSB-029-SO-0-0.5	CFSB-029-SO-0.5-2	CFSB-029-SO-10-12	CFSB-030-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**12200**	**10300**	**8860**	**18600**	**7760**	**9790**	**8220**	**9140**	**47300**
Antimony	3.1	47	0.035	mg/kg	0.38 UJ	0.35 UJ	0.41 UJ	0.43 UJ	0.41 UJ	0.33 UJ	0.32 UJ	0.48 J-	0.42 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.8**	**5.4**	**5.3**	**5.9**	**3.4**	**4**	**3.8**	**8.2**	**8.5**
Barium	1500	22000	16	mg/kg	78.3	92.7	90.8	115	66.6	58	40.7	69.1	268
Beryllium	**16**	230	1.9	mg/kg	0.41	0.49	0.85	1.2	0.58	0.39	0.32	0.32 J	1.3
Cadmium	**7.1**	98	0.069	mg/kg	0.29 J	0.26 U	0.31 U	0.93 J	0.31 U	0.25 U	0.24 U	0.28 U	1.4
Calcium	--	--	--	mg/kg	23900 J	29800 J	55600	49100	36800	30500	23300	69600	6670 J
Chromium	--	--	--	mg/kg	9.5	12	9.9 J+	11.7 J+	10 J+	9.5	8.4	10	13.3
Cobalt	**2.3**	35	0.027	mg/kg	**4.6**	**5**	**5.2**	**4.6**	**4.5**	**4.7**	**4.5**	**6.7**	**6.9**
Copper	**310**	4700	2.8	mg/kg	13.7	11.2	15.8 J+	12.5 J+	10.6 J+	12.7	9.9	15.6	27.2
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.49 J	0.22 J	0.094 J	1.5	0.06 J	0.016 J	0.015 U	0.024 J	**4.7 J**
Iron	**5500**	82000	35	mg/kg	**9850**	**13200**	**15900**	**11600**	**12500**	**13800**	**11500**	**16100**	**13100**
Lead	400	800	--	mg/kg	9.9 J+	11 J+	7.5 J	15.9 J	5.6 J	7.8 J+	8.7 J+	15.4 J+	26.8 J+
Magnesium	--	--	--	mg/kg	9990	13000	14500	11800	12300	10800	8610	9100	6960
Manganese	**180**	2600	2.8	mg/kg	**183 J**	**407 J**	**762**	**375**	**360**	**334**	**218**	**425**	**479 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.012 U	0.012 J	0.012 U	0.018	0.012 U	0.018 J	0.012 J	0.033	0.021
Nickel	**150**	2200	2.6	mg/kg	30.9 J+	16.8 J+	16	56.4	10	11.3 J	9.8 J	12.7 J	81.3 J+
Potassium	--	--	--	mg/kg	1270	899	894 J+	1380 J+	899 J+	810 J	557 J	580 J	1900
Selenium	39	580	0.052	mg/kg	0.36 U	0.32 U	0.39 U	0.4 U	0.38 U	0.31 U	0.3 U	0.34 U	0.71 J
Silver	39	580	0.08	mg/kg	0.69 U	0.63 U	0.76 U	0.78 U	0.75 U	0.6 U	0.59 U	0.67 U	0.76 U
Sodium	--	--	--	mg/kg	38.1 J	32.3 U	40.6 J	101 J	38.2 U	30.5 U	30.1 U	34.2 U	247
Thallium	**0.078**	1.2	0.0014	mg/kg	**0.38**	**0.21 J**	**0.24 J**	**0.25 J**	0.15 U	0.12 U	0.12 U	0.14 U	**0.64**
Vanadium	**39**	580	8.6	mg/kg	16.6 J-	14.6 J-	12.5 J	21.3 J	14.4 J	8.5	6.4	10.1	**41.3 J-**
Zinc	2300	35000	37	mg/kg	82.4 J-	45.1 J-	40.9	141	30.4	39.6	30.9	50	148 J-

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and IDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-030	CFSB-030	CFSB-033	CFSB-033	CFSB-033	CFSB-034	CFSB-034	CFSB-034	CFSB-035
				Sample Date:	6/13/2016	6/13/2016	5/23/2016	5/23/2016	5/23/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-030-SO-0.5-2	CFSB-030-SO-10-12	CFSB-033-SO-0-0.5	CFSB-033-SO-0.5-2	CFSB-033-SO-10-12	CFSB-034-SO-0-0.5	CFSB-034-SO-0.5-2	CFSB-034-SO-10-12	CFSB-035-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**25600**	5340	**12500**	**12100**	**8210**	**14800**	**9920**	6860	**10800**
Antimony	3.1	47	0.035	mg/kg	0.37 UJ	0.33 UJ	0.38 UJ	0.37 UJ	0.35 UJ	0.49 UJ	0.46 UJ	0.48 UJ	0.45 U
Arsenic	**0.68**	3	0.0015	mg/kg	**7.2**	**1.3**	**4.7**	**6**	**5.6**	**3.7**	**4.7**	**5.3**	**6.2**
Barium	1500	22000	16	mg/kg	112	22.7	55.3	82.9	48.3	80.8	89.5	55.6	73.4
Beryllium	**16**	230	1.9	mg/kg	1.2	0.19 J	0.43	0.51	0.31 J	0.47 J	0.4 J	0.27 J	0.42 J
Cadmium	**7.1**	98	0.069	mg/kg	0.72 J	0.25 U	0.29 U	0.28 U	0.26 U	0.37 U	0.35 U	0.36 U	0.34 U
Calcium	--	--	--	mg/kg	2390	14200 J	36900	18200	60100	22000	17600	59800	13000
Chromium	--	--	--	mg/kg	9.8	7.4	9.6	10.3	9.9	9.4	8.7	8.2	13.6
Cobalt	**2.3**	35	0.027	mg/kg	**4.5**	**3.2**	**4.8**	**4.3**	**4.5**	**5.1**	**4.6**	**4.6**	**5.1**
Copper	**310**	4700	2.8	mg/kg	22.4 J+	4.7	13.3	45.7	7.8	13.9 J	13.4 J	14 J	21.9
Cyanide, Total	**2.3**	15	0.0015	mg/kg	2	0.039 J	0.18	0.85	0.045 J	0.097 J	0.02 J	0.049 J	0.2
Iron	**5500**	82000	35	mg/kg	**14700**	**6260**	**12700**	**14100**	**14000**	**13800**	**13800**	**11000**	**17800**
Lead	400	800	--	mg/kg	26.8 J+	2.2 J+	10.4 J+	13.7 J+	7.1 J+	17 J	8 J	7.2 J	9.5
Magnesium	--	--	--	mg/kg	9050	7140	12000	10700	13600	11300	12500	11100	9260
Manganese	**180**	2600	2.8	mg/kg	**233 J**	177 J	**311**	**323**	**369**	**367**	**366**	**287**	**760**
Mercury	1.1	4.6	0.0033	mg/kg	0.019	0.012 U	0.023	0.012 J	0.012 U	0.02	0.02 J	0.027	0.021
Nickel	**150**	2200	2.6	mg/kg	79.4	6.8 J+	20.4 J	18.1 J	11.8 J	19.8 J	9.7 J	9.4 J	41.4
Potassium	--	--	--	mg/kg	699	408	758 J	957 J	653 J	730	925	588	546
Selenium	39	580	0.052	mg/kg	0.64 J	0.31 U	0.43 J	0.35 U	0.32 U	0.46 U	0.43 U	0.45 U	1.1 J
Silver	39	580	0.08	mg/kg	0.7 J	0.61 U	0.69 U	0.68 U	0.63 U	0.9 U	0.84 U	0.88 U	0.82 U
Sodium	--	--	--	mg/kg	98.5	31.1 U	57.9 J	88.3 J	32.3 U	92 J	248	44.8 U	340
Thallium	**0.078**	1.2	0.0014	mg/kg	**0.27 J**	0.13 U	0.14 U	0.14 U	0.13 U	0.18 U	0.17 U	0.18 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	27.8	4.1 J-	11.3	16.4	7.9	13	9.7	5.1	11.8
Zinc	2300	35000	37	mg/kg	77.9	19.8 J-	42.2	69.4	38.6	51.5	35	28	28.9

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-035	CFSB-035	CFSB-036	CFSB-036	CFSB-036	CFSB-037	CFSB-037	CFSB-037	CFSB-038
				Sample Date:	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/21/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-035-SO-0.5-2	CFSB-035-SO-10-12	CFSB-036-SO-0-0.5	CFSB-036-SO-0.5-2	CFSB-036-SO-10-12	CFSB-037-SO-0-0.5	CFSB-037-SO-0.5-2	CFSB-037-SO-10-12	CFSB-038-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**10900**	**16000**	**9820**	**8750**	6870	**12100**	**9600**	**9700**	**10300 J**
Antimony	3.1	47	0.035	mg/kg	0.41 UJ	0.44 UJ	0.57 J	0.43 UJ	0.49 UJ	0.43 UJ	0.4 UJ	0.43 UJ	0.45 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.2**	**4.2**	**6.2**	**3.9**	**4.4**	**5.5**	**4.8**	**4.9**	**7.6**
Barium	1500	22000	16	mg/kg	67.3	107	76.7	48.3	38.9	89.9	69.3	64.4	113
Beryllium	**16**	230	1.9	mg/kg	0.41	0.5	0.37 J	0.36 J	0.25 J	0.44	0.38 J	0.31 J	0.39 J
Cadmium	**7.1**	98	0.069	mg/kg	0.31 U	0.33 U	0.33 U	0.32 U	0.37 U	0.33 U	0.31 U	0.33 U	0.34 U
Calcium	--	--	--	mg/kg	13300	7930	22200	26600	45400	23800	26200	24200	12900 J
Chromium	--	--	--	mg/kg	10.8	12.8	84.8	10	6.4	9.9	10.9	9.1	9.7 J
Cobalt	**2.3**	35	0.027	mg/kg	**4.7**	**5.5**	**6.8**	**4.8**	**4.4**	**5.2**	**4.7**	**4.3**	**6.3**
Copper	**310**	4700	2.8	mg/kg	19.5 J	16 J	60 J	14.6 J	9.5 J	18.8 J	13.7 J	12.8 J	23.4 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.051 J	0.057 J	0.05 J	0.024 J	0.018 U	0.026 J	0.029 J	0.023 J	0.07 J
Iron	**5500**	82000	35	mg/kg	**16900**	**16200**	**37100**	**12800**	**10600**	**16000**	**13400**	**12500**	**16000 J**
Lead	400	800	--	mg/kg	7.9 J	9.6 J	21.9 J	9.4 J	10.1 J	16.5 J	10 J	8.7 J	16.3 J
Magnesium	--	--	--	mg/kg	9500	9440	8360	9740	8610	12200	10500	10500	8020 J
Manganese	**180**	2600	2.8	mg/kg	**446**	**509**	**548**	**334**	**313**	**487**	**348**	**338**	**560**
Mercury	1.1	4.6	0.0033	mg/kg	0.025	0.034	0.025	0.026	0.021	0.022	0.021	0.016 J	0.019
Nickel	**150**	2200	2.6	mg/kg	21 J	13.5 J	80.5 J	26.7 J	7.2 J	15.1 J	10.4 J	9 J	16 J
Potassium	--	--	--	mg/kg	878	1710	635	621	574	772	676	615	863
Selenium	39	580	0.052	mg/kg	0.62 J	0.41 U	1.2 J	0.49 J	0.46 U	0.4 U	0.38 U	0.41 U	0.42 J
Silver	39	580	0.08	mg/kg	0.75 U	0.81 U	0.8 U	0.78 U	0.9 U	0.79 U	0.74 U	0.79 U	0.82 U
Sodium	--	--	--	mg/kg	508	241	63.9 J	137	45.8 U	40.2 U	42.6 J	42.7 J	61.9 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.15 U	0.17 U	0.17 U	0.16 U	0.18 U	0.16 U	0.15 U	0.16 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	10	12.4	18.1	10.9	5.7	11.1	8.4	7.1	11.6 J
Zinc	2300	35000	37	mg/kg	33	44.1	52.5	41.2	26.6	42.4	37.8	32.6	47.7 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-038	CFSB-038	CFSB-040	CFSB-040	CFSB-040	CFSB-042	CFSB-042	CFSB-042	CFSB-044
				Sample Date:	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-038-SO-0.5-2	CFSB-038-SO-10-12	CFSB-040-SO-0-0.5	CFSB-040-SO-0.5-2	CFSB-040-SO-10-12	CFSB-042-SO-0-0.5	CFSB-042-SO-0.5-2	CFSB-042-SO-10-12	CFSB-044-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	6880	6370 J	**12500**	**8420**	**8000**	**9540**	**12500**	6300	**12900**
Antimony	3.1	47	0.035	mg/kg	0.4 UJ	0.4 UJ	0.44 J-	0.42 UJ	0.43 UJ	0.57 J-	0.44 UJ	0.4 UJ	0.48 J-
Arsenic	**0.68**	3	0.0015	mg/kg	**3.2 J**	**3**	**4.9 J**	**4.2 J**	**4.3 J**	**4.8 J**	**4.7 J**	**4.4 J**	**5.5**
Barium	1500	22000	16	mg/kg	77.1	83.5	70	71.7	56.4	76.6	132	54.1	104 J+
Beryllium	**16**	230	1.9	mg/kg	0.22 J	0.25 J	0.4 J	0.35 J	0.38 J	0.37 J	0.5	0.29 J	0.59
Cadmium	**7.1**	98	0.069	mg/kg	0.3 U	0.31 U	0.39 J	0.32 U	0.33 U	0.31 U	0.33 U	0.3 U	0.39 J
Calcium	--	--	--	mg/kg	11600 J	19400 J	18500 J	22900 J	29400 J	17500 J	4760 J	59500 J	23900
Chromium	--	--	--	mg/kg	8.7	8.8 J	10.7	9.8	11.8	13.8	10.8	7.9	10.5
Cobalt	**2.3**	35	0.027	mg/kg	**4.1**	**4.3**	**5.2**	**5.5**	**5**	**4.7**	**6.4**	**4.4**	**5.4**
Copper	**310**	4700	2.8	mg/kg	10.6 J+	9.7 J	20.7 J+	12.7 J+	12.7 J+	19.8 J+	13.6 J+	9.3 J+	18.6
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.067 J	0.019 J	0.044 J	0.032 J	0.02 J	0.055 J	0.039 J	0.016 U	0.17
Iron	**5500**	82000	35	mg/kg	**10200**	**11400 J**	**13100**	**13800**	**13400**	**14900**	**16600**	**11000**	**13200**
Lead	400	800	--	mg/kg	8.4 J	4.9 J	27.2 J	9.4 J	16.1 J	16.4 J	12.3 J	9 J	14.5
Magnesium	--	--	--	mg/kg	5590 J	8370 J	7660 J	9560 J	9810 J	12200 J	8430 J	12100 J	8290
Manganese	**180**	2600	2.8	mg/kg	**379**	**409**	**332**	**374**	**355**	**425**	**588**	**339**	**358**
Mercury	1.1	4.6	0.0033	mg/kg	0.016 J	0.013 J	0.025	0.017	0.019	0.029	0.016	0.015 J	0.022
Nickel	**150**	2200	2.6	mg/kg	10 J+	8.5 J	18.2 J+	12.4 J+	12.3 J+	12.8 J+	11.6 J+	8.4 J+	46.1
Potassium	--	--	--	mg/kg	526 J	723	895 J	704 J	768 J	754 J	851 J	545 J	980
Selenium	39	580	0.052	mg/kg	0.38 U	0.38 U	0.39 U	0.39 U	0.41 U	0.38 U	0.41 U	0.37 U	0.63 J
Silver	39	580	0.08	mg/kg	0.73 U	0.74 U	0.77 U	0.76 U	0.79 U	0.75 U	0.81 U	0.73 U	0.76 U
Sodium	--	--	--	mg/kg	37.4 U	44 J	256	55.1 J	150	95 J	45.9 J	37.4 U	576
Thallium	**0.078**	1.2	0.0014	mg/kg	0.15 U	0.15 U	0.16 U	0.16 U	0.16 U	0.15 U	0.17 U	0.15 U	0.16 U
Vanadium	**39**	580	8.6	mg/kg	7.9	7 J	12.7	9.7	9.2	9.5	13.4	5.8	23.1
Zinc	2300	35000	37	mg/kg	31.2 J	28.7 J	72.9 J	42.3 J	40.9 J	53.5 J	42.6 J	26.6 J	57.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-044	CFSB-044	CFSB-045	CFSB-045	CFSB-045	CFSB-046	CFSB-046	CFSB-046	CFSB-048
				Sample Date:	5/20/2016	5/20/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-044-SO-0.5-2.0	CFSB-044-SO-10-12	CFSB-045-SO-0-0.5	CFSB-045-SO-0.5-2	CFSB-045-SO-10-12	CFSB-046-SO-0-0.5	CFSB-046-SO-0.5-2.0	CFSB-046-SO-10-12	CFSB-048-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**13900**	6640	**9500 J**	**9830 J**	7280 J	**9230**	**8110**	6720	**12700**
Antimony	3.1	47	0.035	mg/kg	0.44 UJ	0.43 UJ	0.42 UJ	0.43 UJ	0.38 UJ	0.41 UJ	0.38 UJ	0.37 UJ	0.46 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**5.2**	**3.9**	**4.3**	**4.8**	**2.9**	**4.6**	**4.6**	**3.5 J**	**4.3**
Barium	1500	22000	16	mg/kg	92.8 J+	58.5 J+	91.2	84.5	61.3	83.2 J+	51.3 J+	44.4	78.5 J+
Beryllium	**16**	230	1.9	mg/kg	0.7	0.37 J	0.41	0.4 J	0.29 J	0.35 J	0.28 J	0.3 J	0.56
Cadmium	**7.1**	98	0.069	mg/kg	0.39 J	0.33 U	0.32 U	0.33 U	0.29 U	0.31 U	0.29 U	0.28 U	0.35 U
Calcium	--	--	--	mg/kg	17000	39200	33000 J	14100 J	31500 J	54700	64600	36000 J	17300
Chromium	--	--	--	mg/kg	10.6	8.6	9.5 J	15.3 J	9.8 J	74.2	21.3	12.1	9
Cobalt	**2.3**	35	0.027	mg/kg	**5.7**	**5.3**	**4.1**	**5.3**	**4.2**	**5.4**	**4.5**	**4.3**	**4.8**
Copper	**310**	4700	2.8	mg/kg	15.5	9.9	13.4 J	15.3 J	11.2 J	23.4	11.6	11.9 J+	15.5
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.46	0.019 U	0.14	0.076 J	0.049 J	0.015 U	0.016 U	0.017 U	0.16
Iron	**5500**	82000	35	mg/kg	**13900**	**13200**	**11900 J**	**14500 J**	**10900 J**	**14300**	**13900**	**12200**	**11400**
Lead	400	800	--	mg/kg	15	5.4	41.9 J	29.4 J	19.2 J	32.1	6.7	6.6 J	16.2
Magnesium	--	--	--	mg/kg	8770	12600	10300 J	9050 J	9720 J	14100	15600	11400 J	8960
Manganese	**180**	2600	2.8	mg/kg	**403**	**339**	**353**	**455**	**308**	**510**	**386**	**314**	**301**
Mercury	1.1	4.6	0.0033	mg/kg	0.02	0.015 J	0.024	0.024	0.018	0.02	0.019	0.014 J	0.021
Nickel	**150**	2200	2.6	mg/kg	45.3	10.2	12 J	13.2 J	10.6 J	13.4	10.2	9.4 J+	31.4
Potassium	--	--	--	mg/kg	960	548	1040	910	745	1410	880	543 J	783
Selenium	39	580	0.052	mg/kg	0.55 J	0.4 U	0.39 U	0.41 U	0.36 U	0.38 U	0.35 U	0.35 U	0.43 U
Silver	39	580	0.08	mg/kg	0.8 U	0.79 U	0.77 U	0.79 U	0.7 U	0.75 U	0.69 U	0.68 U	0.96 J
Sodium	--	--	--	mg/kg	618	76 J	256	214	293	75.3 J	46.1 J	34.8 U	124
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.16 U	0.16 U	0.16 U	0.14 U	0.15 U	0.14 U	0.14 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	23.6	10.8	11.8 J	11.6 J	8.5 J	7.9	6.5	7.8	15.8
Zinc	2300	35000	37	mg/kg	50	31.3	51.6 J	57.2 J	39.5 J	39.3	41.3	30.3 J	50.1

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-048	CFSB-048	CFSB-049	CFSB-049	CFSB-050	CFSB-050	CFSB-050	CFSB-051	CFSB-051
			Sample Date:	5/20/2016	5/20/2016	5/28/2016	5/28/2016	5/21/2016	5/21/2016	5/21/2016	5/21/2016	5/21/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-048-SO-0.5-2.0	CFSB-048-SO-10-12	CFSB-049-SO-0.5-2	CFSB-049-SO-10-12	CFSB-050-SO-0-0.5	CFSB-050-SO-0.5-2	CFSB-050-SO-10-12	CFSB-051-SO-0-0.5	CFSB-051-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**10700**	6820	7140	6030	6780 J	**15200 J**	5900 J	**7960**	7450
Antimony	3.1	47	0.035	mg/kg	0.45 UJ	0.42 UJ	0.4 U	0.4 U	0.44 UJ	0.45 UJ	0.37 UJ	0.44 UJ	0.44 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**3.9**	**3.3**	**4.3**	**3.4**	**2.7**	**3.4 J**	**3 J**	**4.5 J**	**4.4 J**
Barium	1500	22000	16	mg/kg	123 J+	39.1 J+	65.3	44.3	54.3	208	42.7	72.7	72.6
Beryllium	**16**	230	1.9	mg/kg	0.49	0.38 J	0.27 J	0.21 J	0.26 J	0.5	0.23 J	0.3 J	0.32 J
Cadmium	**7.1**	98	0.069	mg/kg	0.34 U	0.32 U	0.31 U	0.3 U	0.34 U	0.34 U	0.28 U	0.33 U	0.33 U
Calcium	--	--	--	mg/kg	19700	33900	32500	41400	12400 J	16300 J	28500 J	31000 J	13100 J
Chromium	--	--	--	mg/kg	9.1	8.5	7.2	7.8	7.5 J	20 J	7.8 J	27.9	23.3
Cobalt	**2.3**	35	0.027	mg/kg	**5.3**	**4.5**	**3.9**	**3.9**	**3.7**	**6.1**	**4.3**	**5.1**	**4.8**
Copper	**310**	4700	2.8	mg/kg	15.1	9.8	9.6	8.3	14.7 J	30.8 J	13.5 J	13.1 J+	15.2 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.066 J	0.017 U	0.037 J-	0.016 UJ	0.048 J	0.11	0.017 U	0.026 J	0.052 J
Iron	**5500**	82000	35	mg/kg	**13300**	**12300**	**11100**	**10600**	**9380 J**	**16000 J**	**11200 J**	**13500**	**12400**
Lead	400	800	--	mg/kg	10.2	4.9	5.9	5.8	22 J	27.1 J	3.9 J	39.4 J	26.7 J
Magnesium	--	--	--	mg/kg	7660	10600	8200	11300	6350 J	6110 J	9540 J	8550 J	7230 J
Manganese	**180**	2600	2.8	mg/kg	**438**	**295**	**376**	**265**	**261**	**630**	**324**	**374**	**369**
Mercury	1.1	4.6	0.0033	mg/kg	0.018	0.012 U	0.022	0.012 J	0.019	0.018	0.012 J	0.015 J	0.043
Nickel	**150**	2200	2.6	mg/kg	18.4	9.3	7.7	8	11.8 J	18 J	9.2 J	13.4 J+	10.4 J+
Potassium	--	--	--	mg/kg	658	637	477	442	552	808 J	559 J	700 J	702 J
Selenium	39	580	0.052	mg/kg	0.46 J	0.39 U	0.38 U	0.37 U	0.42 U	0.42 U	0.34 U	0.41 U	0.41 U
Silver	39	580	0.08	mg/kg	0.82 U	0.76 U	0.74 U	0.73 U	0.81 U	0.82 U	0.67 U	0.8 U	0.8 U
Sodium	--	--	--	mg/kg	92.8 J	58.5 J	37.7 U	37.1 U	68.1 J	226	37.4 J	197	132
Thallium	**0.078**	1.2	0.0014	mg/kg	0.17 U	0.16 U	0.15 U	0.15 U	0.17 U	0.17 U	0.14 U	0.16 U	0.16 U
Vanadium	**39**	580	8.6	mg/kg	13.5	9.3	6.7	5.4	9 J	13.6 J	7 J	12	9.6
Zinc	2300	35000	37	mg/kg	62.2	32.1	27.4	27.1	63.8 J	66 J	28.9 J	81.6 J	86.1 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and IDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-051	CFSB-052	CFSB-052	CFSB-053	CFSB-053	CFSB-054	CFSB-054	CFSB-054	CFSB-055
				Sample Date:	5/21/2016	5/20/2016	5/20/2016	5/31/2016	5/31/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016
				Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-051-SO-10-12	CFSB-052-SO-0.5-2	CFSB-052-SO-10-12	CFSB-053-SO-0.5-2	CFSB-053-SO-10-12	CFSB-054-SO-0-0.5	CFSB-054-SO-0.5-2	CFSB-054-SO-10-12	CFSB-055-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	7430	**9000**	6620	7340	7650	**13200**	**12100**	**8560**	**24500**
Antimony	3.1	47	0.035	mg/kg	0.43 UJ	0.4 UJ	0.39 UJ	0.47 UJ	0.41 UJ	0.35 U	0.34 UJ	0.34 U	0.37 U
Arsenic	**0.68**	3	0.0015	mg/kg	**6 J**	**4.1 J**	**4.9 J**	**1.9**	**4.1**	**4.8 J**	**3.9**	**3.7 J**	**5.4 J**
Barium	1500	22000	16	mg/kg	65.4	104	82.3	66.3	57.6	89.4 J	125	60.9 J	79.9 J
Beryllium	**16**	230	1.9	mg/kg	0.33 J	0.33 J	0.35 J	0.23 J	0.38 J	0.47	0.63	0.36	0.96
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	0.31 U	0.29 U	0.35 U	0.31 U	0.27 U	0.26 U	0.26 U	0.28 U
Calcium	--	--	--	mg/kg	43200 J	81500 J	30900 J	10200	33200	20800 J	34000	25000 J	22900 J
Chromium	--	--	--	mg/kg	10.8	16.9	9.5	6.4	10.8	9.7 J	9.5	8.8 J	20.1 J
Cobalt	**2.3**	35	0.027	mg/kg	**5.4**	**9.6**	**5**	**3.5**	**4.6**	**5.6**	**4.9**	**4.8**	**5.8**
Copper	**310**	4700	2.8	mg/kg	14.1 J+	18 J+	12.8 J+	7.1 J	15.6 J	11.5	11.5	12.8	16
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.025 J	0.091 J	0.029 J	0.023 J	0.017 U	0.083 J-	0.07 J-	0.017 UJ	0.59 J-
Iron	**5500**	82000	35	mg/kg	**12600**	**12600**	**13800**	**9690**	**12500**	**13200**	**14300**	**13000**	**14800**
Lead	400	800	--	mg/kg	10.8 J	8.7 J	5.9 J	13.6 J	7.2 J	11.1	10.1	8.5	23.7
Magnesium	--	--	--	mg/kg	9730 J	8860 J	10900 J	5970	12800	11700 J	14800	12200 J	9220 J
Manganese	**180**	2600	2.8	mg/kg	**377**	**402**	**359**	**253**	**329**	**419 J**	**484**	**362 J**	**394 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.021	0.012 U	0.014 J	0.018 J	0.017	0.021	0.016 J	0.016 J	0.017
Nickel	**150**	2200	2.6	mg/kg	10.9 J+	9.3 J+	9.5 J+	7.1 J	9.9 J	14.9 J	15.3	9.6 J	38.7 J
Potassium	--	--	--	mg/kg	696 J	1390 J	629 J	476	661	861 J	781	776 J	1140 J
Selenium	39	580	0.052	mg/kg	0.4 U	0.38 U	0.36 U	0.44 U	0.38 U	0.33 U	0.32 U	0.32 U	0.35 U
Silver	39	580	0.08	mg/kg	0.78 U	0.74 U	0.71 U	0.86 U	0.75 U	0.65 U	0.62 U	0.63 U	0.68 U
Sodium	--	--	--	mg/kg	90.9 J	214	58.4 J	43.7 U	52.8 J	56.3 J	54.1 J	34.9 J	164
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.15 U	0.15 U	0.18 U	0.15 U	0.13 U	0.13 U	0.13 U	0.14 U
Vanadium	**39**	580	8.6	mg/kg	7.1	8.9	8.4	6.2	9.1	11.1 J	10.6	8.5 J	18.6 J
Zinc	2300	35000	37	mg/kg	44.7 J	145	36.7	24.3	30.8	39.9	38.1	32.3	66.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-055	CFSB-055	CFSB-057	CFSB-057	CFSB-057	CFSB-059	CFSB-059	CFSB-059	CFSB-059
				Sample Date:	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-055-SO-0.5-2	CFSB-055-SO-10-12	CFSB-057-SO-0-0.5	CFSB-057-SO-0.5-2	CFSB-057-SO-10-12	CFSB-DUP8-SO	CFSB-059-SO-0-0.5	CFSB-059-SO-0.5-2	CFSB-059-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**16300**	**8090**	**22100**	**15300**	**8600**	**8130**	**10900**	**10100**	**7850**
Antimony	3.1	47	0.035	mg/kg	0.33 U	0.36 UJ	0.32 UJ	0.43 U	0.43 UJ	0.36 UJ	0.32 UJ	0.37 UJ	0.34 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.2 J**	**3.1**	**4.1**	**2.5**	**3.8**	**2.1**	**2.8**	**4.7**	**3.5**
Barium	1500	22000	16	mg/kg	69 J	71.5	146 J	81.5	66.8	52.6	68.2	66	66.2
Beryllium	**16**	230	1.9	mg/kg	0.65	0.48	0.55	0.28 J	0.33 J	0.26 J	0.29 J	0.43	0.4
Cadmium	**7.1**	98	0.069	mg/kg	0.25 U	0.27 U	0.24 U	0.33 U	0.32 U	0.27 U	0.24 U	0.28 U	0.26 U
Calcium	--	--	--	mg/kg	28300 J	33100	45000 J	16000	38400	7010	7500	8950	41800
Chromium	--	--	--	mg/kg	9.9 J	8.5	11	8.1	9.1	6.4	9.7	8.9	10
Cobalt	**2.3**	35	0.027	mg/kg	**4.6**	**4.9**	**4.8**	**3.5**	**5.1**	**4.2**	**4.5**	**4.9**	**5.3**
Copper	**310**	4700	2.8	mg/kg	15.4	12.6	12.9	10.3	17.7 J	5.7 J	9.9 J	13.6	14.6
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.26 J-	0.11 J-	0.085 J-	0.066 J-	0.037 J-	0.058 J-	0.048 J-	0.038 J-	0.018 UJ
Iron	**5500**	82000	35	mg/kg	**12200**	**11000**	**11200**	**7960**	**13400**	**7910**	**12300**	**13900**	**13500**
Lead	400	800	--	mg/kg	14	8.3	11.4 J	8.4	7.2 J	4.3	6.8	11.7	5.9
Magnesium	--	--	--	mg/kg	10100 J	10600	20800 J	5670	12900	5640	7510	8960	12700
Manganese	**180**	2600	2.8	mg/kg	**373 J**	**576**	**562 J**	**225**	**362**	173	**261**	**347**	**336**
Mercury	1.1	4.6	0.0033	mg/kg	0.028	0.021	0.013 U	0.012 U	0.016	0.012 J	0.017	0.031	0.012 J
Nickel	**150**	2200	2.6	mg/kg	23.1 J	12.3	29.6	36	11.9 J	15.3	15.7	10.6	10.3
Potassium	--	--	--	mg/kg	885 J	779	866	330	749	543	616	866	763
Selenium	39	580	0.052	mg/kg	0.31 U	0.34 U	0.3 UJ	0.4 U	0.4 U	0.34 U	0.3 U	0.34 U	0.32 U
Silver	39	580	0.08	mg/kg	0.6 U	0.66 U	0.59 U	0.79 U	0.78 U	0.66 U	0.59 U	0.67 U	0.63 U
Sodium	--	--	--	mg/kg	91.3	112	62.8 J	58.9 J	58.6 J	33.8 U	31.3 J	34.2 U	32 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.12 U	0.14 U	0.12 U	0.16 U	0.16 U	0.14 U	0.12 U	0.14 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	11.6 J	8	14.7	13.1	8	6.3	8.8	9.3	9
Zinc	2300	35000	37	mg/kg	52.1	32.6	61.4	38.4	35.7	28	35.6	34.5	35.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-060	CFSB-060	CFSB-060	CFSB-062	CFSB-062	CFSB-062	CFSB-064	CFSB-064	CFSB-064
				Sample Date:	5/27/2016	5/27/2016	5/27/2016	6/2/2016	6/2/2016	6/2/2016	6/3/2016	6/3/2016	6/3/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-060-SO-0-0.5	CFSB-060-SO-0.5-2	CFSB-060-SO-10-12	CFSB-062-SO-0-0.5	CFSB-062-SO-0.5-2	CFSB-062-SO-10-12	CFSB-064-SO-0-0.5	CFSB-064-SO-0.5-2	CFSB-064-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	6800	6390	**8510**	**14600 J**	**13000 J**	6880 J	**14500**	**17100**	6540
Antimony	3.1	47	0.035	mg/kg	0.34 U	0.34 U	0.33 U	0.44 UJ	0.44 UJ	0.41 UJ	0.38 UJ	0.39 UJ	0.36 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**2.9 J**	**3 J**	**3.7 J**	**6.8 J**	**4.8 J**	**3.2 J**	**3.6**	**4.3**	**3.8**
Barium	1500	22000	16	mg/kg	92.9 J	55.2 J	73.7 J	149 J	123 J	44.8 J	134	221	79.1
Beryllium	**16**	230	1.9	mg/kg	0.29 J	0.32 J	0.31 J	0.63	0.67	0.41	0.54	0.66	0.45
Cadmium	**7.1**	98	0.069	mg/kg	0.26 U	0.26 U	0.25 U	0.34 U	0.34 U	0.31 U	0.29 U	0.3 U	0.28 U
Calcium	--	--	--	mg/kg	26200 J	36600 J	38200 J	4730	11200	35600	4270	6040	28100
Chromium	--	--	--	mg/kg	7.3 J	6.7 J	8.9 J	11 J	11.5 J	8.7 J	9.6	9.7	9.5
Cobalt	**2.3**	35	0.027	mg/kg	**4.1**	**4.5**	**4.9**	**6.4**	**6.6**	**4.5**	**5.2**	**6.3**	**5**
Copper	**310**	4700	2.8	mg/kg	19.3	8.7	12.6	24.4	23.2	14.6	12.5 J	13.7 J	18.5 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.046 J	0.055 J	0.018 J	0.075 J	0.07 J	0.027 J	0.084 J	0.13	0.017 U
Iron	**5500**	82000	35	mg/kg	**9790**	**10600**	**13200**	**16400 J**	**19600 J**	**13000 J**	**13100**	**15700**	**10500**
Lead	400	800	--	mg/kg	4.9	4.2	6.3	14.6 J	9.6 J	4.8 J	10.5 J	10.6 J	6.4 J
Magnesium	--	--	--	mg/kg	13900 J	9690 J	14500 J	8100	12500	11600	6980	7290	10200
Manganese	**180**	2600	2.8	mg/kg	**364 J**	**209 J**	**402 J**	**507 J**	**538 J**	**276 J**	**360**	**656**	**350**
Mercury	1.1	4.6	0.0033	mg/kg	0.013 J	0.014 J	0.015 J+	0.02	0.014 J	0.013 J	0.015 J	0.016 J	0.02
Nickel	**150**	2200	2.6	mg/kg	10.5 J	10.3 J	10.6 J	17.1	16.5	9.1	14.1	13	10
Potassium	--	--	--	mg/kg	585 J	566 J	741 J	781	582	532	1150 J+	1080 J+	827 J+
Selenium	39	580	0.052	mg/kg	0.32 U	0.32 U	0.31 U	0.41 U	0.41 U	0.38 U	0.35 U	0.37 U	0.34 U
Silver	39	580	0.08	mg/kg	0.63 U	0.63 U	0.61 U	0.81 U	0.81 U	0.75 U	0.69 U	0.72 U	0.67 U
Sodium	--	--	--	mg/kg	32 U	459	36.1 J	57.1 J	51 J	38.8 J	51.2 J	61.5 J	46.7 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.13 U	0.12 U	0.17 U	0.17 U	0.15 U	0.14 U	0.15 U	0.14 U
Vanadium	**39**	580	8.6	mg/kg	6 J	5.2 J	7.6 J	15.8 J	13.2 J	8.6 J	14.1	16.1	6.4
Zinc	2300	35000	37	mg/kg	27.7	30.6	37.8	60.5 J	53 J	31.3 J	43.3	78.2	25.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-065	CFSB-065	CFSB-065	CFSB-066	CFSB-066	CFSB-066	CFSB-068	CFSB-068	CFSB-069
				Sample Date:	6/2/2016	6/2/2016	6/2/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-065-SO-0-0.5	CFSB-065-SO-0.5-2	CFSB-065-SO-10-12	CFSB-066-SO-0-0.5	CFSB-066-SO-0.5-2	CFSB-066-SO-10-12	CFSB-068-SO-0.5-2	CFSB-068-SO-10-12	CFSB-069-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**16600 J**	**22800 J**	6180 J	**22700**	**14600**	2840	**10500**	**7870**	**13800**
Antimony	3.1	47	0.035	mg/kg	0.47 UJ	0.46 UJ	0.39 UJ	0.48 J	0.4 J	0.34 U	0.42 UJ	0.34 U	0.43 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**5.5 J**	**7.9 J**	**3.4 J**	**6.8 J**	**5.9 J**	**1.6 J**	**4.1**	**3.6 J**	**4.5**
Barium	1500	22000	16	mg/kg	208 J	204 J	111 J	67.7 J	68.4 J	28.7 J	50.8	37.5 J	75.8
Beryllium	**16**	230	1.9	mg/kg	0.66	0.86	0.7	0.75	0.52	0.13 J	0.38 J	0.19 J	0.39 J
Cadmium	**7.1**	98	0.069	mg/kg	0.35 U	0.9 J	0.29 U	1.7	0.6 J	0.26 U	0.32 U	0.25 U	0.33 U
Calcium	--	--	--	mg/kg	1940	2400	37800	25400 J	45400 J	14000 J	26900	33800 J	17200
Chromium	--	--	--	mg/kg	12.4 J	18 J	8.4 J	46.5 J	31.5 J	6.9 J	10.5	10 J	11.2
Cobalt	**2.3**	35	0.027	mg/kg	**7**	**8.7**	**4.9**	**7.8**	**6.6**	1.9	**6.1**	**3**	**5.2**
Copper	**310**	4700	2.8	mg/kg	22.6	52.6	36.7	26.5	20.5	4.3	13.7 J	9.4	15.8
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.29	0.62	0.045 J	0.19	0.14	0.018 U	0.02 J	0.023 J	0.034 J
Iron	**5500**	82000	35	mg/kg	**17500 J**	**16800 J**	**11200 J**	**19600**	**16300**	4860	**17300**	**11600**	**15500**
Lead	400	800	--	mg/kg	14.5 J	26 J	5.4 J	18.4	22.5	2.2	8.6 J	4.6	12.4
Magnesium	--	--	--	mg/kg	7960	8140	15100	11300 J	13800 J	5150 J	11700	11200 J	9690
Manganese	**180**	2600	2.8	mg/kg	**429 J**	**371 J**	**402 J**	**405 J**	**395 J**	**200 J**	**372**	**236 J**	**361**
Mercury	1.1	4.6	0.0033	mg/kg	0.069	0.27	0.012 J	0.02 J+	0.017	0.028 J+	0.016 J+	0.027 J+	0.015 J+
Nickel	**150**	2200	2.6	mg/kg	29.2	98.1	8.7	140 J	76.9 J	4.5 J	16.6 J	8.4 J	15.3
Potassium	--	--	--	mg/kg	705	773	661	1320 J	1130 J	359 J	683	617 J	664
Selenium	39	580	0.052	mg/kg	0.44 U	0.44 J	0.36 U	0.44 J	0.33 J	0.32 U	0.39 U	0.31 U	0.4 U
Silver	39	580	0.08	mg/kg	0.85 U	0.99 J	0.71 U	0.6 U	0.64 U	0.63 U	0.76 U	0.61 U	0.79 U
Sodium	--	--	--	mg/kg	89.4 J	112 J	50.2 J	1590	847	35.3 J	63.8 J	31.4 U	55.8 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.18 U	0.17 U	0.15 U	0.12 U	0.13 U	0.13 U	0.16 U	0.13 U	0.16 U
Vanadium	**39**	580	8.6	mg/kg	19.7 J	31.8 J	9.3 J	17.7 J	12.5 J	3.2 J	9.3	6.8 J	10.7
Zinc	2300	35000	37	mg/kg	85.3 J	244 J	32.1 J	59.6	53.5	11.3	41.9	30.9	46.2

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-069	CFSB-069	CFSB-071	CFSB-071	CFSB-071	CFSB-071	CFSB-073	CFSB-073	CFSB-073
			Sample Date:	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	6/1/2016	6/1/2016	6/1/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:	CFSB-069-SO-0.5-2	CFSB-069-SO-10-12	CFSB-071-SO-0-0.5	CFSB-071-SO-0.5-2	CFSB-071-SO-10-12	CFSB-DUP7-SO	CFSB-073-SO-0-0.5	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**10100**	6840	**10100**	**12600**	5130	4740	**15200**	**10600**	6920
Antimony	3.1	47	0.035	mg/kg	0.34 U	0.41 UJ	0.32 U	0.34 U	0.45 UJ	0.34 U	0.37 UJ	0.36 UJ	0.34 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.2 J**	**3.4**	**5.7 J**	**4.7 J**	**2.7**	**2.5 J**	**4.9**	**4.4**	**2.3**
Barium	1500	22000	16	mg/kg	49.9 J	261	40.3 J	51.4 J	65.6	52.5 J	121	60.6	58.5
Beryllium	**16**	230	1.9	mg/kg	0.35	0.3 J	0.32	0.34	0.27 J	0.25 J	0.59	0.44	0.25 J
Cadmium	**7.1**	98	0.069	mg/kg	0.25 U	0.31 U	0.24 U	0.26 U	0.34 U	0.26 U	0.28 U	0.27 U	0.26 U
Calcium	--	--	--	mg/kg	38200 J	63700	51700 J	42500 J	49700 J	27700 J	17300	11200	48200
Chromium	--	--	--	mg/kg	9.8 J	13.7	6.4 J	9.7 J	8.9	6.6 J	11.1	10.2	9.2
Cobalt	**2.3**	35	0.027	mg/kg	**6.1**	**6.6**	**3.5**	**4.6**	**4.6**	**4**	**6.1**	**5.5**	**4.5**
Copper	**310**	4700	2.8	mg/kg	12.8	13.3	9.4	12.5	9.4	10.7	12.6	17.9	9
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.018 U	0.018 U	0.072 J	0.029 J	0.02 J	0.016 U	0.019 J	0.017 U	0.017 U
Iron	**5500**	82000	35	mg/kg	**14400**	**13700**	**13300**	**14000**	**10600**	**9090**	**14400**	**16000**	**11400**
Lead	400	800	--	mg/kg	9.9	6	9.3	12.1	4.1	2.5	9.7	8.1	4.8
Magnesium	--	--	--	mg/kg	12600 J	12100	27500 J	17600 J	23000 J	7820 J	12800	10200	9930
Manganese	**180**	2600	2.8	mg/kg	**379 J**	**324**	**460 J**	**444 J**	**738 J**	**436 J**	**506**	**316**	**270**
Mercury	1.1	4.6	0.0033	mg/kg	0.018 J+	0.012 U	0.025	0.018	0.013 U	0.012 U	0.014 J	0.022	0.016 J
Nickel	**150**	2200	2.6	mg/kg	12.2 J	13.1	11.2 J	13.6 J	7.6	6.4 J	28.2	11.7	8.7
Potassium	--	--	--	mg/kg	653 J	645	766 J	848 J	530	398 J	916 J+	936 J+	659 J+
Selenium	39	580	0.052	mg/kg	0.31 U	0.38 U	0.3 U	0.32 U	0.42 U	0.31 U	0.34 U	0.33 U	0.32 U
Silver	39	580	0.08	mg/kg	0.61 U	0.75 U	0.59 U	0.63 U	0.82 U	0.61 U	0.67 U	0.65 U	0.62 U
Sodium	--	--	--	mg/kg	31.4 U	68.6 J	38.5 J	40.1 J	54.5 J	31.4 UJ	40.3 J	33.4 U	31.7 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.15 U	0.12 U	0.13 U	0.17 U	0.13 U	0.14 U	0.13 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	8.1 J	12.9	6.6 J	7.9 J	6.9	4.7 J	14.8	11.8	9.7
Zinc	2300	35000	37	mg/kg	41	30.2	32.9	39.4	25.8	26.8	46.3	36.5	26.5

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-074	CFSB-074	CFSB-074	CFSB-075	CFSB-075	CFSB-075	CFSB-079	CFSB-079	CFSB-079
					Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-074-SO-0-0.5	CFSB-074-SO-0.5-2	CFSB-074-SO-10-12	CFSB-075-SO-0-0.5	CFSB-075-SO-0.5-2	CFSB-075-SO-10-12	CFSB-079-SO-0-0.5	CFSB-079-SO-0.5-2	CFSB-079-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg		**14200**	7420	**8610**	**11500**	**12200**	**12500**	**13700**	**7990**	3950
Antimony	3.1	47	0.035	mg/kg		0.41 UJ	0.34 UJ	0.42 UJ	0.42 UJ	0.35 UJ	0.34 UJ	0.44 UJ	0.44 UJ	0.31 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.7**	**2.5**	**3.5**	**3.6**	**3.9**	**3.5**	**4.6**	**4.4**	**2.9**
Barium	1500	22000	16	mg/kg		70.5	52.9	109	125	105	103	118	108	76.9
Beryllium	**16**	230	1.9	mg/kg		0.41	0.29 J	0.3 J	0.42	0.5	0.44	0.55	0.29 J	0.31
Cadmium	**7.1**	98	0.069	mg/kg		0.31 U	0.26 U	0.32 U	0.32 U	0.3 J	0.26 U	0.34 U	0.33 U	0.24 U
Calcium	--	--	--	mg/kg		26400	40100	36100	17800	37000	22600	21800	22800	17800
Chromium	--	--	--	mg/kg		9.4	7.9	9.9	9	9.5	10.2	8.9	10.1	6.7
Cobalt	**2.3**	35	0.027	mg/kg		**4.8**	**4.6**	**4**	**5**	**5.1**	**5.5**	**4.7**	**5**	**7**
Copper	**310**	4700	2.8	mg/kg		12.6	10.2	11.3	13	10.6	11.8	7.6	13.4	5.5
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.018 U	0.018 U	0.015 U	0.031 J	0.02 J	0.015 U	0.03 J	0.021 J	0.018 U
Iron	**5500**	82000	35	mg/kg		**10700**	**11700**	**11500**	**13300**	**12500**	**15500**	**10300**	**12000**	**8610**
Lead	400	800	--	mg/kg		7.8	4.6	6.1	9	11.7	8.3	8.5	5.7	3
Magnesium	--	--	--	mg/kg		11000	12200	13300	8820	15700	10800	13900	8100	9680
Manganese	**180**	2600	2.8	mg/kg		**360**	**393**	**340**	**513**	**504**	**353**	**453**	**333**	**316**
Mercury	1.1	4.6	0.0033	mg/kg		0.016	0.012 U	0.012 J	0.017 J	0.014 J	0.018	0.013 U	0.026	0.016 J
Nickel	**150**	2200	2.6	mg/kg		30	9.2	11.7	14.1	19.6	14	20.6	10.7	12.7
Potassium	--	--	--	mg/kg		639	675 J+	786	616	1050 J+	860 J+	586	452	467 J+
Selenium	39	580	0.052	mg/kg		0.38 U	0.32 U	0.39 U	0.4 U	0.33 U	0.32 U	0.42 U	0.41 U	0.29 U
Silver	39	580	0.08	mg/kg		0.74 U	0.62 U	0.76 U	0.77 U	0.64 U	0.62 U	0.81 U	0.81 U	0.57 U
Sodium	--	--	--	mg/kg		38.2 J	31.6 U	39.1 U	62.3 J	65.2 J	46.8 J	41.4 U	41.2 U	29 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.15 U	0.13 U	0.16 U	0.16 U	0.13 U	0.13 U	0.17 U	0.17 U	0.12 U
Vanadium	**39**	580	8.6	mg/kg		13.8	6.9	7.7	11.8	14.4	11.8	13.6	7.1	4.6
Zinc	2300	35000	37	mg/kg		36.2	32.6	31.2	46.6	58.2	45.1	34.6	29.3	19.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-080	CFSB-080	CFSB-080	CFSB-082	CFSB-082	CFSB-082	CFSB-084	CFSB-084	CFSB-084
				Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	5/27/2016	5/27/2016	5/27/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-080-SO-0-0.5	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12	CFSB-082-SO-0-0.5	CFSB-082-SO-0.5-2	CFSB-082-SO-10-12	CFSB-084-SO-0-0.5	CFSB-084-SO-0.5-2	CFSB-084-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**11000**	**9690**	**7730**	**10100**	**9810**	**8890**	7170	5540	6750
Antimony	3.1	47	0.035	mg/kg	0.42 UJ	0.42 UJ	0.37 UJ	0.43 UJ	0.46 UJ	0.44 UJ	0.34 U	0.38 U	0.36 U
Arsenic	**0.68**	3	0.0015	mg/kg	**4.5**	**3.8**	**3.9**	**3.2**	**4.7**	**5.3**	**3.2 J**	**3.3 J**	**2.3 J**
Barium	1500	22000	16	mg/kg	95.1	74.3	47.9	118	64.6	60.9	65.4 J	45.3 J	103 J
Beryllium	**16**	230	1.9	mg/kg	0.4 J	0.37 J	0.34 J	0.45	0.35 J	0.41 J	0.32 J	0.25 J	0.28 J
Cadmium	**7.1**	98	0.069	mg/kg	0.32 U	0.32 U	0.28 U	0.32 U	0.35 U	0.34 U	0.26 U	0.29 U	0.27 U
Calcium	--	--	--	mg/kg	32000	1700	30200	19300	42100	15000	36700 J	32000 J	31500 J
Chromium	--	--	--	mg/kg	8.8	9.7	10.2	11.6	8.5	9.6	8.4 J	15.4 J	7.1 J
Cobalt	**2.3**	35	0.027	mg/kg	**4.3**	**5.5**	**4.1**	**3.9**	**5.2**	**5.4**	**4.2**	**3.3**	**4.2**
Copper	**310**	4700	2.8	mg/kg	14	16.2	18.2	9	12.8	16.8	9.2	9.5	11.3
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.05 J	0.023 J	0.018 J	0.018 J	0.019 U	0.016 U	0.026 J	0.02 U	0.023 J
Iron	**5500**	82000	35	mg/kg	**12400**	**14500**	**11200**	**9140**	**14200**	**14600**	**8880**	**9320**	**10100**
Lead	400	800	--	mg/kg	8.4	7.6	5.4	8.3	8.3	8.7	6.2	5.5	4.3
Magnesium	--	--	--	mg/kg	10200	8060	9040	9400	10400	9070	10700 J	13500 J	9100 J
Manganese	**180**	2600	2.8	mg/kg	**325**	**454**	**256**	**316**	**359**	**351**	**357 J**	**396 J**	**366 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.021	0.032	0.016 J	0.028	0.018	0.022	0.018	0.013 U	0.019
Nickel	**150**	2200	2.6	mg/kg	10.9	10.4	12	15.4	9.8	10.8	12.2 J	11.3 J	8 J
Potassium	--	--	--	mg/kg	614	582	572	616	615	649	633 J	694 J	539 J
Selenium	39	580	0.052	mg/kg	0.4 U	0.4 U	0.35 U	0.4 U	0.43 U	0.42 U	0.31 U	0.36 U	0.33 U
Silver	39	580	0.08	mg/kg	0.78 U	0.78 U	0.68 U	0.78 U	0.84 U	0.81 U	0.62 U	0.7 U	0.65 U
Sodium	--	--	--	mg/kg	39.6 U	39.6 U	34.6 U	40 U	42.8 U	41.6 U	50.1 J	35.5 U	33.3 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.16 U	0.14 U	0.16 U	0.17 U	0.17 U	0.13 U	0.14 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	9.1	8.9	7.5	9.7	9.5	12.5	7.9 J	5.4 J	5.9 J
Zinc	2300	35000	37	mg/kg	38.1	32.2	30.1	33	39.6	34.6	35.2	32.6	28.9

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-086	CFSB-086	CFSB-086	CFSB-087	CFSB-087	CFSB-087	CFSB-088	CFSB-088	CFSB-088
				Sample Date:	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-086-SO-0-0.5	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0-0.5	CFSB-087-SO-0.5-2	CFSB-087-SO-10-12	CFSB-088-SO-0-0.5	CFSB-088-SO-0.5-2	CFSB-088-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**10400**	**10600**	7330	**15200**	**11900**	**9240**	**8680**	**9860**	7270
Antimony	3.1	47	0.035	mg/kg	0.35 UJ	0.34 UJ	0.43 UJ	0.36 UJ	0.34 UJ	0.34 UJ	0.34 UJ	0.33 UJ	0.34 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**2.8 J**	**4.2 J**	**3.6**	**4 J**	**4.1 J**	**3.8 J**	**3.3 J**	**3.9 J**	**3.6 J**
Barium	1500	22000	16	mg/kg	89.4	91.3	76	99.5	109	93.7	57.5	85.6	96.2
Beryllium	**16**	230	1.9	mg/kg	0.48	0.45	0.31 J	0.57	0.45	0.45	0.45	0.46	0.36
Cadmium	**7.1**	98	0.069	mg/kg	0.3 J	0.26 U	0.33 U	0.29 J	0.26 U	0.26 U	0.26 U	0.25 U	0.26 U
Calcium	--	--	--	mg/kg	20400	26600	43200	18500	37200	22100	14300	21900	42000
Chromium	--	--	--	mg/kg	9.9	11.1	8.8 J+	10.9	10.7	15.2	8.5	9.9	12.2
Cobalt	**2.3**	35	0.027	mg/kg	**5 J-**	**5.6 J-**	**4.2**	**5.2 J-**	**4.8 J-**	**4.8 J-**	**4.6 J-**	**4.3 J-**	**5 J-**
Copper	**310**	4700	2.8	mg/kg	16.6 J+	16 J+	12.4	19.5 J+	12.6 J+	13.4 J+	7.4 J+	9.9 J+	12.5 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.024 J	0.019 U	0.024 J	0.041 J	0.045 J	0.032 J	0.022 J	0.017 U	0.017 U
Iron	**5500**	82000	35	mg/kg	**10900**	**14200**	**10000**	**12600**	**12600**	**11700**	**9860**	**11000**	**12500**
Lead	400	800	--	mg/kg	8.1 J	10.2 J	7.4 J-	12.9 J	8.6 J	7 J	8 J	8 J	4.9 J
Magnesium	--	--	--	mg/kg	10700	11700	12700	9920	11700	9830	10000	10900	14300
Manganese	**180**	2600	2.8	mg/kg	**359**	**385**	**331**	**333**	**443**	**302**	**361**	**373**	**296**
Mercury	1.1	4.6	0.0033	mg/kg	0.013 J+	0.017 J+	0.013 J+	0.021 J+	0.016 J+	0.017 J+	0.018 J+	0.022 J+	0.012 U
Nickel	**150**	2200	2.6	mg/kg	16.9	14.2	10.5	22.1	13.7	15.4	13.5	14.5	10.3
Potassium	--	--	--	mg/kg	856 J+	965 J+	663	1100 J+	1070 J+	949 J+	685 J+	752 J+	790 J+
Selenium	39	580	0.052	mg/kg	0.33 U	0.31 U	0.4 U	0.34 U	0.32 U	0.32 U	0.32 U	0.31 U	0.32 U
Silver	39	580	0.08	mg/kg	0.64 U	0.61 U	0.79 U	0.66 U	0.63 U	0.63 U	0.63 U	0.6 U	0.62 U
Sodium	--	--	--	mg/kg	45.7 J	45.8 J	40.3 U	62.6 J	63.3 J	43.1 J	32.2 U	30.8 U	53.7 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.13 U	0.16 U	0.14 U	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	10.1	11.6	6.9	14.8	13	9.4	8.4	8.3	9.1
Zinc	2300	35000	37	mg/kg	57.8	43.1	32.7	88.8	56.2	52.3	28.5	33.7	30.9

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-092	CFSB-092	CFSB-092	CFSB-094	CFSB-094	CFSB-094	CFSB-095	CFSB-095	CFSB-095
					Sample Date:	5/26/2016	5/26/2016	5/26/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-092-SO-0-0.5	CFSB-092-SO-0.5-2	CFSB-092-SO-10-12	CFSB-094-SO-0-0.5	CFSB-094-SO-0.5-2.0	CFSB-094-SO-10-12	CFSB-095-SO-0-0.5	CFSB-095-SO-0.5-2.0	CFSB-095-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg		**11500**	**11400**	3860	**8670**	**9660**	**9420**	**12100**	**8470**	6250
Antimony	3.1	47	0.035	mg/kg		0.36 UJ	0.33 UJ	0.32 UJ	0.35 J-	0.34 UJ	0.33 UJ	0.34 UJ	0.32 UJ	0.34 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**4.6 J**	**4.5 J**	**3.4 J**	**3**	**3.2**	**6.4**	**4.4**	**3.7**	**3.7**
Barium	1500	22000	16	mg/kg		100	78	61.1	88.4	67.6	69.6	123	129	95.8
Beryllium	**16**	230	1.9	mg/kg		0.48	0.53	0.21 J	0.44	0.4	0.44	0.42	0.31	0.34
Cadmium	**7.1**	98	0.069	mg/kg		0.28 U	0.25 U	0.25 U	0.52 J	0.29 J	0.25 U	0.25 U	0.24 U	0.29 J
Calcium	--	--	--	mg/kg		15700	11900	51700	65300	10600	29800	12900	16800	130000
Chromium	--	--	--	mg/kg		11.2	10.5	5.1	10.5	7.9	11.7	8.8	7.2	9.4
Cobalt	**2.3**	35	0.027	mg/kg		**5.3 J-**	**6 J-**	2.2 J-	**4.9**	**4.1**	**5.5**	**5.4**	**4.4**	**3.7**
Copper	**310**	4700	2.8	mg/kg		14.7 J+	13.5 J+	5.5 J+	21 J	13.2 J	13.9 J	15.2 J+	10.8 J+	10.1 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.02 J	0.017 J	0.014 U	0.04 J	0.042 J	0.024 J	0.053 J	0.047 J	0.018 U
Iron	**5500**	82000	35	mg/kg		**14700**	**14600**	**6550**	**12600**	**11300**	**13300**	**12700**	**9980**	**8980**
Lead	400	800	--	mg/kg		12.2 J	13.7 J	7.4 J	48.2 J	18.6 J	9.6 J	11	8.4	6.3
Magnesium	--	--	--	mg/kg		10400	10900	7380	8700	8720	13600	8530	7120	10900
Manganese	**180**	2600	2.8	mg/kg		**454**	**394**	**192**	**285**	**265**	**481**	**411**	**438**	**345**
Mercury	1.1	4.6	0.0033	mg/kg		0.022 J+	0.012 U	0.012 J+	0.027	0.022	0.064	0.015 J	0.018	0.013 J
Nickel	**150**	2200	2.6	mg/kg		12.8	13.5	4.6	22.3	10.2	10.4	10.6	8.9	7.9
Potassium	--	--	--	mg/kg		1230 J+	1070 J+	461 J+	727	671	710	953 J+	641 J+	699 J+
Selenium	39	580	0.052	mg/kg		0.34 U	0.31 U	0.3 U	0.33 U	0.32 U	0.31 U	0.31 U	0.3 U	0.32 U
Silver	39	580	0.08	mg/kg		0.67 U	0.6 U	0.59 U	0.64 U	0.62 U	0.61 U	0.61 U	0.58 U	0.63 U
Sodium	--	--	--	mg/kg		35.1 J	37.3 J	35.8 J	172	115	59.3 J	31.3 U	29.8 U	38.9 J
Thallium	**0.078**	1.2	0.0014	mg/kg		0.14 U	0.12 U	0.12 U	0.13 U	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg		12.6	12.9	4.1	8.4	7.6	7.5	11.7	8.4	10.5
Zinc	2300	35000	37	mg/kg		42.4	44.3	15.6	41.6	41.7	38.5	41.8	32	33.5

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-097	CFSB-097	CFSB-097	CFSB-098	CFSB-098	CFSB-098	CFSB-099	CFSB-099	CFSB-099
					Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-097-SO-0-0.5	CFSB-097-SO-0.5-2	CFSB-097-SO-10-12	CFSB-098-SO-0-0.5	CFSB-098-SO-0.5-2	CFSB-098-SO-10-12	CFSB-099-SO-0-0.5	CFSB-099-SO-0.5-2	CFSB-099-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg		**15900**	**13800**	5720	6560	**9840**	5360	**15100**	5990	3660
Antimony	3.1	47	0.035	mg/kg		0.39 UJ	0.34 UJ	0.31 UJ	0.37 UJ	0.33 UJ	0.33 UJ	0.4 UJ	0.31 UJ	0.31 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.7**	**4.6**	**5.3**	**2.4**	**3.5**	**2.8**	**7.6**	**3.4**	**2.1**
Barium	1500	22000	16	mg/kg		199	161	112	52.3	71	90	200	63.2	30.8
Beryllium	**16**	230	1.9	mg/kg		0.57	0.5	0.29 J	0.21 J	0.42	0.21 J	0.68	0.27 J	0.097 J
Cadmium	**7.1**	98	0.069	mg/kg		0.3 U	0.26 U	0.24 U	0.28 U	0.25 U	0.25 U	0.3 U	0.24 U	0.24 U
Calcium	--	--	--	mg/kg		4750	7450	52300	31500	24100	33900	36200 J	41400	21000
Chromium	--	--	--	mg/kg		7.7	8.7	9.1	6.5	9.5	15.3	14.5	7.4	5.2
Cobalt	**2.3**	35	0.027	mg/kg		**5.5**	**5.4**	**3.7**	**3.5**	**4.1**	**4.1**	**6.6**	**3.8**	2.2
Copper	**310**	4700	2.8	mg/kg		11.5 J+	12.5 J+	8.6 J+	8.9 J+	13 J+	10.8 J+	19.9 J+	16.5 J+	4.1 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.089 J	0.054 J	0.017 J	0.077 J	0.037 J	0.018 J	0.29	0.055 J	0.016 U
Iron	**5500**	82000	35	mg/kg		**13600**	**13100**	**8630**	**11200**	**11100**	**8260**	**15600**	**8780**	**6490**
Lead	400	800	--	mg/kg		9.2	11.4	5	4.1	9	4.3	16.9	12.6	3.3
Magnesium	--	--	--	mg/kg		7980	6660	13200	10600	11600	11100	16900	14300	8170
Manganese	**180**	2600	2.8	mg/kg		**597**	**460**	**379**	**328**	**330**	**218**	**506**	**296**	176
Mercury	1.1	4.6	0.0033	mg/kg		0.013 U	0.016 J	0.015 J	0.015 J	0.02	0.013 J	0.042	0.023	0.014 J
Nickel	**150**	2200	2.6	mg/kg		10.3	9.9	7.8	6.3	10.1	7.4	11	7.4	4.7
Potassium	--	--	--	mg/kg		916 J+	857 J+	641 J+	492 J+	872 J+	465 J+	1090 J+	571 J+	389 J+
Selenium	39	580	0.052	mg/kg		0.37 U	0.32 U	0.29 U	0.35 U	0.31 U	0.31 U	0.66 J	0.29 U	0.3 U
Silver	39	580	0.08	mg/kg		0.72 U	0.63 U	0.57 U	0.68 U	0.61 U	0.6 U	0.73 U	0.57 U	0.58 U
Sodium	--	--	--	mg/kg		58.1 J	44 J	29.3 U	102	112	30.8 U	52.4 J	29.2 U	29.4 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.15 U	0.13 U	0.12 U	0.14 U	0.13 U	0.12 U	0.15 U	0.12 U	0.12 U
Vanadium	**39**	580	8.6	mg/kg		12.2	13.3	5.3	7.4	9.7	5.4	10.8	5.3	3.2
Zinc	2300	35000	37	mg/kg		45.9	45.6	24.1	22.2	34.4	20.1	47.8	27.5	16.1

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-100	CFSB-100	CFSB-100	CFSB-101	CFSB-101	CFSB-101	CFSB-102	CFSB-102	CFSB-102
				Sample Date:	5/24/2016	5/24/2016	5/24/2016	7/21/2016	7/21/2016	7/21/2016	7/13/2016	7/13/2016	7/13/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-100-SO-0-0.5	CFSB-100-SO-0.5-2	CFSB-100-SO-10-12	CFSB-101-SO-0-0.5	CFSB-101-SO-0.5-2	CFSB-101-SO-10-12	CFSB-102-SO-0-0.5	CFSB-102-SO-0.5-2	CFSB-102-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	6420	6060	3720	**11800**	**8020**	6850	7170	6590	7290
Antimony	3.1	47	0.035	mg/kg	0.34 UJ	0.33 UJ	0.35 UJ	0.54 UJ	0.52 UJ	0.52 UJ	0.49 UJ	0.42 UJ	0.44 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**2.3**	**1.6**	**2.9**	**2.4**	**3.2**	**3.5**	**1.3**	**1.3**	**1.7**
Barium	1500	22000	16	mg/kg	59.7	32.6	119	174	85.5	55.2	242	65.4	44.5
Beryllium	**16**	230	1.9	mg/kg	0.26 J	0.16 J	0.25 J	0.39 J	0.55	0.35 J	0.51	0.47	0.39 J
Cadmium	**7.1**	98	0.069	mg/kg	0.26 U	0.25 U	0.26 U	0.41 U	0.4 U	0.39 U	0.37 U	0.32 U	0.33 U
Calcium	--	--	--	mg/kg	28200	24400	33800	8540	5450	3670	77200	21200	8090
Chromium	--	--	--	mg/kg	5.3	5.5	9	10.2	9.3	8.2	9.1 J	7.1 J	6.6 J
Cobalt	**2.3**	35	0.027	mg/kg	**2.8**	**3.3**	**3.7**	**5.5**	**4.2**	**4**	**3.9**	**4.3**	**4.2**
Copper	**310**	4700	2.8	mg/kg	8.6 J+	5.6 J+	6.2 J+	39.4	9.1	8	44.3	25	12.4
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.023 J	0.018 U	0.021 J	0.7	0.3	0.27	0.6	0.33	0.15
Iron	**5500**	82000	35	mg/kg	**6170**	**9310**	**8580**	**12600**	**12600**	**12200**	**8430 J**	**9270 J**	**10600 J**
Lead	400	800	--	mg/kg	6.2	2.9	3.3	12.9	6.3	5.6	11.5	7.5	5.9
Magnesium	--	--	--	mg/kg	7260	12200	15400	8340	8110	7210	6650	8270	8670
Manganese	**180**	2600	2.8	mg/kg	**191**	**248**	**328**	111	71	78.2	73.5 J	78 J	106 J
Mercury	1.1	4.6	0.0033	mg/kg	0.015 J	0.02	0.013 J	0.034	0.017 J	0.014 U	0.054	0.048	0.012 U
Nickel	**150**	2200	2.6	mg/kg	10	6.5	6.5	15.8	9	8.4	14.7 J	11.5 J	8.3 J
Potassium	--	--	--	mg/kg	433 J+	324 J+	527 J+	1080	929	656	534	501	472
Selenium	39	580	0.052	mg/kg	0.32 U	0.31 U	0.33 U	0.5 U	0.49 U	0.48 U	0.46 U	0.39 U	0.41 U
Silver	39	580	0.08	mg/kg	0.63 U	0.61 U	0.64 U	0.98 U	0.96 U	0.95 U	0.9 U	0.76 U	0.81 U
Sodium	--	--	--	mg/kg	57.4 J	51.6 J	32.8 J	78 J	56.7 J	48.3 U	87 J	47.4 J	259
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.13 U	0.13 U	0.2 U	0.2 U	0.2 U	0.19 U	0.16 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	6	5.6	4.8	14.2	13.2	13.6	7.1 J	6.3 J	7.3 J
Zinc	2300	35000	37	mg/kg	22.6	29.7	22.6	64.9	29.2	29	79.5	54	34.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-104	CFSB-104	CFSB-104	CFSB-109	CFSB-109	CFSB-109	CFSB-110	CFSB-110	CFSB-110
				Sample Date:	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/14/2016	7/14/2016	7/14/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-104-SO-0-0.5	CFSB-104-SO-0.5-2	CFSB-104-SO-10-12	CFSB-109-SO-0-0.5	CFSB-109-SO-0.5-2	CFSB-109-SO-10-12	CFSB-110-SO-0-0.5	CFSB-110-SO-0.5-2	CFSB-110-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	5520	5870	5260	5370	4170	4950	**8660**	**8190**	5710
Antimony	3.1	47	0.035	mg/kg	0.67 UJ	0.51 UJ	0.43 UJ	0.77 UJ	0.65 UJ	0.39 UJ	0.91 UJ	0.48 UJ	0.4 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**1.2 J**	**1.3**	**8.4**	0.84 U	0.7 U	**1.9**	**1.5 J**	**1.4**	**2.6**
Barium	1500	22000	16	mg/kg	459	181	35.7	653	555	38	911	207	34.1
Beryllium	**16**	230	1.9	mg/kg	0.21 U	0.36 J	0.37 J	0.43 J	0.24 J	0.34 J	0.65 J	0.48	0.29 J
Cadmium	**7.1**	98	0.069	mg/kg	0.51 U	0.39 U	0.32 U	0.58 U	0.49 U	0.3 U	0.69 U	0.37 U	0.3 U
Calcium	--	--	--	mg/kg	168000	55500	40100	244000	201000	13500	289000	53200	9770
Chromium	--	--	--	mg/kg	8.5 J	8.6 J	5.9 J	5.6 J	5 J	6.4 J	10.5 J	8.4 J	6.1 J
Cobalt	**2.3**	35	0.027	mg/kg	**2.5 J**	**3.1**	**6.3**	1.4 U	1.5 J	**3.4**	**3.9 J**	**4.8**	**2.8**
Copper	**310**	4700	2.8	mg/kg	87.5	44.8	12	101	118	5.7	204	57.3	6.8
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.4	0.33	0.11 J	0.59	0.42	0.056 J	0.6	0.34	0.065 J
Iron	**5500**	82000	35	mg/kg	4030 J	**7510 J**	**9110 J**	1760 J	1580 J	**8840 J**	**5790 J**	**10700 J**	**10200 J**
Lead	400	800	--	mg/kg	14.4	8.4	6	11.6	10.3	2.9	22.3	9	3.5
Magnesium	--	--	--	mg/kg	5040	5810	6750	3840	3130	9750	7490	7780	8770
Manganese	**180**	2600	2.8	mg/kg	40.8 J	83.2 J	**181 J**	14.8 J	10.7 J	**286 J**	44.1 J	71.7 J	109 J
Mercury	1.1	4.6	0.0033	mg/kg	0.12	0.1	0.012 U	0.11	0.093	0.012 U	0.14	0.042	0.013 U
Nickel	**150**	2200	2.6	mg/kg	17.5 J	12.8 J	8.3 J	11 J	10.7 J	6.7 J	17.4 J	11 J	6.5 J
Potassium	--	--	--	mg/kg	344	432	356	238	194	369	787	716	439
Selenium	39	580	0.052	mg/kg	0.63 U	0.48 U	0.4 U	0.72 U	0.61 U	0.36 U	0.85 U	0.45 U	0.37 U
Silver	39	580	0.08	mg/kg	1.2 U	0.94 U	0.78 U	1.4 U	1.2 U	0.71 U	1.7 U	0.89 U	0.73 U
Sodium	--	--	--	mg/kg	180	74.8 J	39.9 U	150 J	136 J	36.4 U	268	87.4 J	38.9 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.25 U	0.19 U	0.16 U	0.29 U	0.24 U	0.15 U	0.34 U	0.18 U	0.15 U
Vanadium	**39**	580	8.6	mg/kg	5.5 J	6.4 J	6.4 J	3.2 J	2.7 J	5.2 J	7.6 J	9.6 J	5.5 J
Zinc	2300	35000	37	mg/kg	100	68.3	36.6	76.6	75.9	24.9	131	66.4	28.5

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-113	CFSB-113	CFSB-113	CFSB-113	CFSB-114	CFSB-114	CFSB-114	CFSB-115	CFSB-115
				Sample Date:	8/31/2016	8/31/2016	8/31/2016	8/31/2016	7/12/2016	7/12/2016	7/12/2016	8/31/2016	8/31/2016
				Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-113-SO-0-0.5	CFSB-113-SO-0-0.5Pb	CFSB-113-SO-0.5-2	CFSB-113-SO-2-4	CFSB-114-SO-0-0.5	CFSB-114-SO-0.5-2	CFSB-114-SO-10-12	CFSB-115-SO-0-0.5	CFSB-115-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	6850	NA	**7740**	4250	6070	**8000**	6930	2570	2560
Antimony	3.1	47	0.035	mg/kg	0.41 U	NA	0.3 U	0.3 U	0.44 U	0.42 U	0.41 U	0.35 U	0.32 U
Arsenic	**0.68**	3	0.0015	mg/kg	**1.2**	NA	**1.4**	0.53 J	**3.5**	**5**	**2.9**	0.46 J	0.66 J
Barium	1500	22000	16	mg/kg	972	NA	178	53.3	125	119	71	371	63.6
Beryllium	**16**	230	1.9	mg/kg	0.16 J	NA	0.34 J	0.11 J	0.35 J	0.48	0.3 J	0.11 U	0.11 J
Cadmium	**7.1**	98	0.069	mg/kg	0.43 U	NA	0.32 U	0.32 U	0.33 U	0.32 U	0.31 U	0.38 U	0.33 U
Calcium	--	--	--	mg/kg	313000	NA	55900	7240	8030	8280	13700	116000	13600
Chromium	--	--	--	mg/kg	6	NA	8.5	2.9	6.4	9.3	15.2	2.6	2.9
Cobalt	**2.3**	35	0.027	mg/kg	2.1 J	NA	**4.4**	2	**4.2**	**5.9**	**4.5**	1.2 J	1.8 J
Copper	**310**	4700	2.8	mg/kg	30.6	NA	12.1	3.8	8.9	12.7	16.2	10.2	3.3
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.12 J	NA	0.07 J	0.048 J	0.03 J	0.017 U	0.018 U	0.31	0.087 J
Iron	**5500**	82000	35	mg/kg	4240	NA	**11700**	**5800**	**9640**	**14000**	**12900**	2550	3350
Lead	400	800	--	mg/kg	8	6.6	6.9	1.8	7.8	7.9	4.4	3.4	2.1
Magnesium	--	--	--	mg/kg	7060	NA	10300	4710	7060	8850	8200	2510	3750
Manganese	**180**	2600	2.8	mg/kg	67.2	NA	121	76.6	**340**	**297**	**216**	32.8	55.6
Mercury	1.1	4.6	0.0033	mg/kg	0.024	NA	0.016 J	0.015 J	0.021	0.026	0.014 J	0.024	0.016 J
Nickel	**150**	2200	2.6	mg/kg	12.3	NA	10.8	3.5	10.8	11.2	10.4	4.4	4.3
Potassium	--	--	--	mg/kg	541	NA	518	168	619	765	854	240	230
Selenium	39	580	0.052	mg/kg	0.4 J	NA	0.28 U	0.28 U	0.41 U	0.39 U	0.39 U	0.33 U	0.29 U
Silver	39	580	0.08	mg/kg	0.8 U	NA	0.59 U	0.58 U	0.8 U	0.77 U	0.75 U	0.69 U	0.62 U
Sodium	--	--	--	mg/kg	120 J	NA	43.6 J	40.4 U	40.8 U	39.3 U	57.5 J	54.3 J	42.8 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	NA	0.12 U	0.12 U	0.16 U	0.16 U	0.16 U	0.14 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	5.7	NA	11.5	4	8	14.5	12.5	3.4	2.6
Zinc	2300	35000	37	mg/kg	40.2	NA	42.9	17.6	27.7	37.1	29.3	16.3	13.1

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-115	CFSB-116	CFSB-116	CFSB-116	CFSB-118	CFSB-118	CFSB-118	CFSB-119	CFSB-119
				Sample Date:	8/31/2016	7/22/2016	7/22/2016	7/22/2016	7/21/2016	7/21/2016	7/21/2016	7/12/2016	7/12/2016
				Sample Depth (ft-bls):	2 - 4	10 - 12	0 - 0.5	0.5 - 2	0 - 0.5	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-115-SO-2-4	CFSB-116-SO-10-12	CFSB-116-SO-0-0.5	CFSB-116-SO-0.5-2	CFSB-118-SO-0-0.5	CFSB-118-SO-10-12	CFSB-118-SO-0.5-2	CFSB-119-SO-0-0.5	CFSB-119-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	6390	6200	**8380**	7090	7200	**8230**	5980	**8300**	6880
Antimony	3.1	47	0.035	mg/kg	0.27 U	0.48 U	0.63 U	0.53 U	0.45 UJ	0.45 UJ	0.42 UJ	0.42 U	0.45 U
Arsenic	**0.68**	3	0.0015	mg/kg	**1.5**	**2.7 J+**	**1.7 J+**	**2 J+**	**2.5**	**4.3**	**1.6**	**4.8**	**3.4**
Barium	1500	22000	16	mg/kg	94.4	44.2	265	43.1	52.3	54.1	55.7	79.3	88.8
Beryllium	**16**	230	1.9	mg/kg	0.24 J	0.22 J	0.52 J	0.3 J	0.25 J	0.21 J	0.21 J	0.36 J	0.37 J
Cadmium	**7.1**	98	0.069	mg/kg	0.28 U	0.36 U	0.48 U	0.4 U	0.34 U	0.34 U	0.32 U	0.32 U	0.34 U
Calcium	--	--	--	mg/kg	14400	7400 J	57100 J	5140 J	13700	33600	8040	14300	11500
Chromium	--	--	--	mg/kg	6.9	8.1	9.2	8	9.2	9.6	6.7	8.6	7.9
Cobalt	**2.3**	35	0.027	mg/kg	**2.7**	**4**	**4.9**	**4.9**	**4.7**	**5**	**3.7**	**5.1**	**4.7**
Copper	**310**	4700	2.8	mg/kg	22.1	8.1 J+	22.7 J+	8.1 J+	9	9.9	7.8	14.4	11.4
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.034 J	0.04 J	0.29	0.059 J	0.02 U	0.019 U	0.038 J	0.14	0.045 J
Iron	**5500**	82000	35	mg/kg	**9260**	**10800**	**11200**	**12500**	**12200**	**14100**	**9750**	**12300**	**11400**
Lead	400	800	--	mg/kg	3.3	4.4 J+	8.2 J+	5.5 J+	4.7	6	4.4	10.7	6.3
Magnesium	--	--	--	mg/kg	6810	7770	9060	7790	9630	12800	6810	8100	8400
Manganese	**180**	2600	2.8	mg/kg	79.9	120	99.6	107	**215**	**293**	88	**312**	**261**
Mercury	1.1	4.6	0.0033	mg/kg	0.013 J	0.014 U	0.018 J	0.014 U	0.025	0.018 J	0.015 J	0.03	0.02
Nickel	**150**	2200	2.6	mg/kg	7.7	8.3	12.6	9.5	9.8	10.7	8.3	15.7	9.6
Potassium	--	--	--	mg/kg	491	437	732	448	490	526	441	972	803
Selenium	39	580	0.052	mg/kg	0.25 U	0.45 U	0.59 U	0.5 U	0.42 U	0.42 U	0.4 U	0.4 U	0.42 U
Silver	39	580	0.08	mg/kg	0.52 U	0.87 U	1.2 U	0.97 U	0.82 U	0.82 U	0.77 U	0.77 U	0.82 U
Sodium	--	--	--	mg/kg	36.1 U	44.6 U	59.1 U	49.4 U	42 U	42.1 U	39.5 U	39.4 U	42 U
Thallium	**0.078**	1.2	0.0014	mg/kg	0.11 U	0.18 U	0.24 U	0.2 U	0.17 U	0.17 U	0.16 U	0.16 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	8.3	9.1	14.8	10.6	10.8	7.4	7.9	11.1	11.3
Zinc	2300	35000	37	mg/kg	22.4	27.9	44.3	35.4	34.5	36.3	32.5	42.6	31.3

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-119	CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-121	CFSB-122
				Sample Date:	7/12/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/19/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-119-SO-10-12	CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-DUP1-SO	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**8140**	**20400**	**30900**	6030	**18100**	**15500 J**	**16700**	6570 J	**20200 J**
Antimony	3.1	47	0.035	mg/kg	0.43 U	0.37 UJ	0.42 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.36 UJ	0.32 UJ	0.5 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**6**	**4.5**	**5.6**	**2.8**	**5**	**4.8 J**	**4.4**	**4.6 J**	**2.8 J**
Barium	1500	22000	16	mg/kg	87.3	245	440	30.3	195	187	156	69.3	289
Beryllium	**16**	230	1.9	mg/kg	0.39 J	0.97	1.2	0.3 J	0.66	0.59	0.57	0.37	0.63
Cadmium	**7.1**	98	0.069	mg/kg	0.33 U	0.28 U	0.32 U	0.26 U	0.28 U	0.28 U	0.28 U	0.24 U	0.38 U
Calcium	--	--	--	mg/kg	25400	3520	3600	9280	2570	2700	1830	32300	3300
Chromium	--	--	--	mg/kg	11.7	16.9	20.9	7.3	10	9.3	10.1	9.3	5.4
Cobalt	**2.3**	35	0.027	mg/kg	**5.3**	**6.2**	**7.2**	**3.8**	**6.4**	**5.9**	**6.3**	**4.5**	**2.9**
Copper	**310**	4700	2.8	mg/kg	19.5	20.3	23	9.6	12.6	11.6 J	10.7	14.8 J	9.1 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.022 J	0.11 J	0.078 J	0.022 J	0.1 J	0.091 J	0.074 J	0.022 J	0.026 U
Iron	**5500**	82000	35	mg/kg	**14200**	**17300**	**18200**	**9730**	**16500**	**15900**	**16400**	**12800**	**8140**
Lead	400	800	--	mg/kg	8.3	14.8	16	7	11.5	10.7	9.3	6.1	6.4
Magnesium	--	--	--	mg/kg	10500	11200	10600	8470	7030	6400	7240	9470	2940
Manganese	**180**	2600	2.8	mg/kg	**280**	**222**	**296**	115	**529**	**492 J**	**454**	**396 J**	49.4 J
Mercury	1.1	4.6	0.0033	mg/kg	0.016 J	0.026	0.039	0.012 U	0.013 J	0.014 J	0.013 U	0.013 J	0.019 U
Nickel	**150**	2200	2.6	mg/kg	11.2	13.4	14.2	7.1	13	13.2	12	8.4	6.4
Potassium	--	--	--	mg/kg	794	1230	1340	529	1080	1180	938	670	519
Selenium	39	580	0.052	mg/kg	0.4 U	0.49 J	0.39 J	0.33 U	0.34 U	0.34 U	0.34 U	0.3 U	0.46 U
Silver	39	580	0.08	mg/kg	0.79 U	0.68 U	0.76 U	0.64 U	0.67 U	0.67 U	0.66 U	0.59 U	0.91 U
Sodium	--	--	--	mg/kg	40.3 U	95.1	251	32.5 U	39.6 J	38 J	54.9 J	43.5 J	552
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.14 U	0.16 U	0.13 U	0.14 U	0.14 U	0.14 U	0.12 U	0.19 U
Vanadium	**39**	580	8.6	mg/kg	11.7	13	12.4	6.7	15.9	15.6	15.1	10.5	7.7
Zinc	2300	35000	37	mg/kg	37.9	50.7	46.9	24.7	57.9	54	47.2	28.3	13.6

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-123	CFSB-124	CFSB-124	CFSB-124	CFSB-125
					Sample Date:	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	19 May 2016	19 May 2016	19 May 2016	18 May 2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg		**15800 J**	4740 J	**17300 J**	**18800 J**	3840 J	**20500 J**	**19600 J**	6740 J	**19600**
Antimony	3.1	47	0.035	mg/kg		0.51 UJ	0.34 UJ	0.41 UJ	0.44 UJ	0.35 UJ	0.43 UJ	0.42 UJ	0.35 UJ	0.37 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**2.2 J**	**3.5 J**	**4.8 J**	**5.3 J**	**2.1 J**	**5.9 J**	**6.8 J**	**5.3 J**	**4.8**
Barium	1500	22000	16	mg/kg		288	43	278	305	45.1	347	303	60.4	229
Beryllium	**16**	230	1.9	mg/kg		0.47 J	0.24 J	0.77	0.87	0.22 J	0.95	0.81	0.33 J	0.65
Cadmium	**7.1**	98	0.069	mg/kg		0.39 U	0.26 U	0.31 U	0.33 U	0.27 U	0.33 U	0.32 U	0.26 U	0.28 U
Calcium	--	--	--	mg/kg		3150	29200	5430	5820	9420	5850	4730	13400	17200
Chromium	--	--	--	mg/kg		4.9	6.3	15.3	16.3	6.7	18.3	15.3	9.9	11.1
Cobalt	**2.3**	35	0.027	mg/kg		**2.8**	**3.7**	**5.8**	**6.3**	**3.2**	**7**	**7.2**	**4.7**	**7.2**
Copper	**310**	4700	2.8	mg/kg		10.2 J	10.6 J	18.5 J	18.4 J	3.7 J	27 J	18.4 J	9.2 J	14.1
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.024 U	0.017 U	0.12 J	0.093 J	0.018 U	0.68	0.16	0.024 J	0.12
Iron	**5500**	82000	35	mg/kg		**7710**	**9580**	**15800**	**17100**	**7100**	**19900**	**19200**	**12100**	**17200**
Lead	400	800	--	mg/kg		5.1	6.1	13.7	14.3	3.1	15.9	12.5	4.8	12.5
Magnesium	--	--	--	mg/kg		2950	6060	10100	10700	6250	11400	9440	8020	8510
Manganese	**180**	2600	2.8	mg/kg		44.4 J	**224 J**	**363 J**	**411 J**	**362 J**	**470 J**	**558 J**	**432 J**	**576**
Mercury	1.1	4.6	0.0033	mg/kg		0.017 U	0.012 J	0.033	0.032	0.012 U	0.019 J	0.016 J	0.012 J	0.018
Nickel	**150**	2200	2.6	mg/kg		5.8	6.9	11.4	12	5.2	14.2	13	9	13.3
Potassium	--	--	--	mg/kg		551	427	1160	1210	475	1510	1220	710	1020
Selenium	39	580	0.052	mg/kg		0.48 U	0.32 U	0.9 J	1.1 J	0.33 U	0.93 J	0.74 J	0.33 U	0.35 U
Silver	39	580	0.08	mg/kg		0.93 U	0.62 U	0.75 U	0.81 U	0.64 U	0.8 U	0.77 U	0.64 U	0.68 U
Sodium	--	--	--	mg/kg		555	31.8 U	78.7 J	93.9 J	32.8 U	76.5 J	74 J	32.5 U	62.7 J
Thallium	**0.078**	1.2	0.0014	mg/kg		0.19 U	0.13 U	0.16 U	0.17 U	0.13 U	0.16 U	0.16 U	0.13 U	0.14 U
Vanadium	**39**	580	8.6	mg/kg		7.4	6.4	10.5	11.3	4.9	12.7	13.3	6.9	16.5
Zinc	2300	35000	37	mg/kg		12.6	23.1	47.3	50.8	16.9	72	59.9	29.3	79.6

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127	CFSB-127	CFSB-127	CFSB-128
					Sample Date:	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	24 May 2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12	CFSB-128-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg		**16200**	**8380**	**29200**	**18900**	**9010**	**26900**	**11700**	**13800**	**14500**
Antimony	3.1	47	0.035	mg/kg		0.36 UJ	0.35 UJ	0.4 UJ	0.38 UJ	0.33 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.34 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**4.7**	**4.1**	**7.1**	**5.3**	**4.5**	**6.4**	**6**	**4.7**	**4.3**
Barium	1500	22000	16	mg/kg		188	87	429	245	80	429	120	172	93.3
Beryllium	**16**	230	1.9	mg/kg		0.76	0.48	1.2	0.61	0.37	0.98	0.35 J	0.49	0.42
Cadmium	**7.1**	98	0.069	mg/kg		0.27 U	0.27 U	0.3 U	0.29 U	0.25 U	0.26 U	0.29 U	0.27 U	0.26 U
Calcium	--	--	--	mg/kg		10900	15600	6000	3040	17100	3630	2370	9300	19000
Chromium	--	--	--	mg/kg		11.1	11	15.5	13.9	21.3	13.3	10.7	14	8.8
Cobalt	**2.3**	35	0.027	mg/kg		**5.9**	**5.7**	**6.1**	**7.4**	**5.1**	**6.1**	**5.5**	**5.7**	**4.6**
Copper	**310**	4700	2.8	mg/kg		15	17.4	24.5	20.6	12.3	17	10.6	10.9	14.1 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.034 J	0.034 J	0.17	0.12	0.026 J	0.087 J	0.052 J	0.029 J	0.04 J
Iron	**5500**	82000	35	mg/kg		**15000**	**12900**	**18600**	**17800**	**13300**	**18700**	**15800**	**15000**	**12000**
Lead	400	800	--	mg/kg		12.4	7.9	15.2	19.3	6.5	12.5	21.2	7.7	14.8
Magnesium	--	--	--	mg/kg		7960	10900	9020	9280	12100	7440	9240	11400	10300
Manganese	**180**	2600	2.8	mg/kg		**462**	**424**	**446**	**462**	**494**	**347**	**659**	**642**	**341**
Mercury	1.1	4.6	0.0033	mg/kg		0.017 J	0.026	0.036	0.021	0.016 J	0.021	0.017 J	0.019	0.016 J
Nickel	**150**	2200	2.6	mg/kg		10.5	11.1	13.6	12.6	10.8	12.1	10.3	11.6	16
Potassium	--	--	--	mg/kg		969	693	1310	782	733	953	555	788	910 J+
Selenium	39	580	0.052	mg/kg		0.34 U	0.33 U	0.71 J	0.35 U	0.31 U	0.4 J	0.35 U	0.33 U	0.32 U
Silver	39	580	0.08	mg/kg		0.66 U	0.65 U	0.73 U	0.69 U	0.6 U	0.63 U	0.69 U	0.65 U	0.63 U
Sodium	--	--	--	mg/kg		63.3 J	33.1 U	136	78 J	35.2 J	135	38.8 J	64.3 J	77.5 J
Thallium	**0.078**	1.2	0.0014	mg/kg		0.14 U	0.13 U	0.15 U	0.14 U	0.12 U	0.13 U	0.14 U	0.13 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg		14	8.6	13.8	12.6	9.3	14.7	12	10.4	12.4
Zinc	2300	35000	37	mg/kg		53.7	32.4	66.8	52.1	31.7	59.4	36.1	41.3	43.3

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-128	CFSB-128	CFSB-129	CFSB-129	CFSB-129	CFSB-130	CFSB-130	CFSB-131	CFSB-131
				Sample Date:	24 May 2016	24 May 2016	5/24/2016	5/24/2016	5/24/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
				Sample Designation:	CFSB-128-SO-0.5-2.0	CFSB-128-SO-10-12	CFSB-129-SO-0-0.5	CFSB-129-SO-0.5-2.0	CFSB-129-SO-10-12	CFSB-130-SO-0.5-2	CFSB-130-SO-10-12	CFSB-131-SO-0.5-2	CFSB-131-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	7530	5970	**11700**	**11900**	7600	5880	**21900**	**10100**	**8000**
Antimony	3.1	47	0.035	mg/kg	0.34 UJ	0.31 UJ	0.37 UJ	0.34 UJ	0.33 UJ	0.43 UJ	0.48 J-	0.38 U	0.4 U
Arsenic	**0.68**	3	0.0015	mg/kg	**2.8**	**2.5**	**5**	**3.5**	**2.5**	**5**	**3.7**	**5.5**	**3.1**
Barium	1500	22000	16	mg/kg	113	185	77.3	66.4	78.8	47	122	98.1	53.9
Beryllium	**16**	230	1.9	mg/kg	0.34	0.31	0.47	0.5	0.39	0.34 J	1.1	0.38	0.36 J
Cadmium	**7.1**	98	0.069	mg/kg	0.26 U	0.23 U	0.28 U	0.26 U	0.25 U	0.32 U	0.34 U	0.29 U	0.32 J
Calcium	--	--	--	mg/kg	34100	36300	27400	17300	20200	40200 J	34200 J	68700	14400
Chromium	--	--	--	mg/kg	5.5	9	8.9	10.1	7.9	6.1	14.6	9.5	8.4
Cobalt	**2.3**	35	0.027	mg/kg	**4**	**3.7**	**4.8**	**4.9**	**6.3**	**2.8 J+**	**4.1 J+**	**4.2**	**4.4**
Copper	**310**	4700	2.8	mg/kg	9.7 J	10 J	13.2 J	12.2 J	9.2 J	23.2 J	8.8 J	8.7	11.1
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.052 J	0.015 U	0.065 J	0.042 J	0.016 U	0.74	1.5	**2.4**	**3.8**
Iron	**5500**	82000	35	mg/kg	**8110**	**8610**	**12800**	**9670**	**10700**	**9640**	**13400**	**13400**	**12600**
Lead	400	800	--	mg/kg	8.7 J	5.3 J	12.5 J	13.5 J	4.9 J	27.7	6.9	6.6	6.6
Magnesium	--	--	--	mg/kg	6570	11200	9530	7370	9690	6510	11600	12000	8320
Manganese	**180**	2600	2.8	mg/kg	**438**	**338**	**370**	**281**	**249**	**210**	**351**	**516**	**267**
Mercury	1.1	4.6	0.0033	mg/kg	0.025	0.012 U	0.016 J	0.014 J	0.013 J	0.013 U	0.012 U	0.012 U	0.012 U
Nickel	**150**	2200	2.6	mg/kg	8.4	7.5	13.2	15.4	9.6	6.6 J-	8.9 J-	9.4	9.4
Potassium	--	--	--	mg/kg	536	869	866	892	783	627	2140	990	693
Selenium	39	580	0.052	mg/kg	0.32 U	0.29 U	0.35 U	0.32 U	0.31 U	0.4 U	0.42 U	0.36 U	0.37 U
Silver	39	580	0.08	mg/kg	0.62 U	0.56 U	0.68 U	0.62 U	0.61 U	0.78 U	0.82 U	0.7 U	0.73 U
Sodium	--	--	--	mg/kg	40.7 J	54.9 J	123	162	31.3 U	363	2110	978	882
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.12 U	0.14 U	0.13 U	0.13 U	0.16 U	0.17 U	0.14 U	0.15 U
Vanadium	**39**	580	8.6	mg/kg	7.7	7.2	9.6	9.4	7.8	4.4	12.3	6.8	8.2
Zinc	2300	35000	37	mg/kg	28.5	24.4	46.1	35.8	36	25.3	33.2	38.9	34.7

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFSB-131	CFSB-131	CFSB-132	CFSB-132	CFSB-132	CFSB-133	CFSB-133	CFSB-133	CFSDP-001	CFSDP-002
					Sample Date:	6/17/2016	6/17/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	08 Sep 2016	08 Sep 2016
					Sample Depth (ft-bls):	18 - 20	22 - 23	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5
					Sample Designation:	CFSB-131-SO-18-20	CFSB-131-SO-22-23	CFSB-132-SO-0-0.5	CFSB-132-SO-0.5-2	CFSB-132-SO-10-12	CFSB-133-SO-0-0.5	CFSB-133-SO-0.5-2	CFSB-133-SO-10-12	CFSDP-001-SO	CFSDP-002-SO
Aluminum	**7700**	110000	3000	mg/kg		6640	7670	**8330**	**16300**	**8400**	**18700**	**17200**	**9040**	**8420**	6570
Antimony	3.1	47	0.035	mg/kg		0.37 U	0.38 U	0.44 UJ	0.51 UJ	0.54 UJ	0.49 UJ	0.53 UJ	0.36 UJ	0.33 UJ	0.31 UJ
Arsenic	**0.68**	3	0.0015	mg/kg		**3.1**	**3.4**	**3.5**	**2.2**	**9.2**	**2.1**	**2.5**	**2.8**	**4.3**	**4.4**
Barium	1500	22000	16	mg/kg		44.4	51.8	84.9	200	53	245	231	71.9	82.6	38
Beryllium	**16**	230	1.9	mg/kg		0.27 J	0.35 J	0.32 J	0.59	0.42 J	0.75	0.68	0.26 J	0.38 J	0.28 J
Cadmium	**7.1**	98	0.069	mg/kg		0.28 U	0.29 U	0.33 U	0.39 U	0.41 U	0.37 U	0.4 U	0.28 U	0.35 U	0.33 U
Calcium	--	--	--	mg/kg		23800	34500	18900	3660	29600	4410	4960	34000	17700	28000
Chromium	--	--	--	mg/kg		7.4	8.2	7.7	12.6	9.7	14.3	13.1	8.3	10	7.7
Cobalt	**2.3**	35	0.027	mg/kg		**4.1**	**5.1**	**3.5**	**4.7**	**6.1**	**5**	**4.8**	**5.7**	**6**	**4.8**
Copper	**310**	4700	2.8	mg/kg		9.7	11.8	13.9 J-	13.3 J-	12.1 J-	17 J-	15.7 J-	13 J	11.2	11
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.091 J	0.76	0.024 J	0.069 J	0.024 U	0.057 J	0.17	0.018 U	0.035 U	0.033 U
Iron	**5500**	82000	35	mg/kg		**12800**	**13200**	**11300**	**12700**	**15100**	**13500**	**13100**	**11500**	**14500**	**10800**
Lead	400	800	--	mg/kg		5.8	5.1	10.2 J	10.3 J	9.1 J	12.7 J	13.5 J	12 J	6.8	6.2
Magnesium	--	--	--	mg/kg		9060	10900	9640	9980	12400	10700	9970	11000	11200	9790
Manganese	**180**	2600	2.8	mg/kg		**307**	**282**	**284**	70.2	174	62.7	89.9	**256**	**286**	**297**
Mercury	1.1	4.6	0.0033	mg/kg		0.012 U	0.012 U	0.021	0.04	0.018 J	0.04	0.034	0.012 U	0.013 U	0.013 U
Nickel	**150**	2200	2.6	mg/kg		9.9	9.7	8.9 J	9.5 J	10.6 J	11 J	10.5 J	10.1	12.1	9.8
Potassium	--	--	--	mg/kg		569	591	737	695	731	851	1090	975 J+	657	390
Selenium	39	580	0.052	mg/kg		0.35 U	0.35 U	0.41 U	0.5 J	0.7 J	0.56 J	0.63 J	0.34 U	0.31 U	0.29 U
Silver	39	580	0.08	mg/kg		0.68 U	0.69 U	0.8 U	0.94 U	0.98 U	0.9 U	0.97 U	0.67 U	0.64 U	0.6 U
Sodium	--	--	--	mg/kg		164	508	51 J	73.8 J	50 U	87.7 J	73.7 J	34.1 U	45.1 J	41.7 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.14 U	0.14 U	0.17 U	0.19 U	0.2 U	0.18 U	0.2 U	0.14 U	0.13 U	0.12 U
Vanadium	**39**	580	8.6	mg/kg		14	9.8	6.3	9.3	11.4	10.2	9.7	6.1	12	7.5
Zinc	2300	35000	37	mg/kg		32.3	35.3	34.1	35.6	40.4	39.8	54.4	38.9	38.1	35

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L3. Metals in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSDP-007	CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011	CFSDP-012	CFSDP-012	CFSDP-013	CFSDP-017	CFSDP-021	CFSDP-022
			Sample Date:	08 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFSDP-007-SO	CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO	CFSDP-012-SO	CFSDP-DUP1-SO	CFSDP-013-SO	CFSDP-017-SO	CFSDP-021-SO	CFSDP-022-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Aluminum	**7700**	110000	3000	mg/kg	**8460**	**8140**	**17400**	**22700**	**14700**	**20700**	**21400**	**18400**	**8010**	**15500**	**34700**
Antimony	3.1	47	0.035	mg/kg	0.32 UJ	0.39 UJ	0.32 UJ	0.37 UJ	0.32 UJ	0.34 UJ	0.34 UJ	0.46 UJ	0.34 UJ	0.31 UJ	0.44 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**3.9**	**3.5**	**6.8**	**4.3**	**5.2**	**5.5**	**5.8**	**4.1**	**3.6**	**7.6**	**6.2**
Barium	1500	22000	16	mg/kg	146	114	295	257	180	251	255	290	104	191	905
Beryllium	**16**	230	1.9	mg/kg	0.49	0.39 J	0.66	0.98	0.64	0.8	0.85	1	0.34 J	0.62	1.1
Cadmium	**7.1**	98	0.069	mg/kg	0.33 U	0.41 U	0.34 U	0.39 U	0.33 U	0.36 U	0.36 U	0.48 U	0.36 U	0.33 U	0.47 U
Calcium	--	--	--	mg/kg	11700	13600	11500	30100	23500	21700	20600	28500	15200	11000	10900
Chromium	--	--	--	mg/kg	10.5	10.2	11.8	14.9	11.8	14.1	15.2	15	9.8	9.1	11.3
Cobalt	**2.3**	35	0.027	mg/kg	**6**	**5.6**	**5.8**	**8.3**	**7.5**	**8.4**	**8.6**	**7.6**	**5.8**	**5.6**	**4**
Copper	**310**	4700	2.8	mg/kg	12.8	9.5	19.8	23.3	20.1	20.8	22.3	27.8	10.2	12.3	32.1
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.067 J	0.036 U	0.34	0.85	0.3	0.56	0.57	1.5	0.038 U	0.24	0.84
Iron	**5500**	82000	35	mg/kg	**15100**	**14300**	**14100**	**18800**	**16800**	**19500**	**20200**	**16300**	**14500**	**14000**	**12700**
Lead	400	800	--	mg/kg	7	5.6	13	18.2	13	18.5	18.1	17.4	6	10.6	14.6
Magnesium	--	--	--	mg/kg	11000	11100	8750	11500	12200	10400	10600	11500	10500	5690	5590
Manganese	**180**	2600	2.8	mg/kg	**264**	**219**	**517**	**640**	**1070**	**1250**	**1280**	**1140**	**225**	**234**	175
Mercury	1.1	4.6	0.0033	mg/kg	0.015 U	0.015 U	0.038	0.045	0.029	0.045	0.043	0.045	0.014 U	0.012 J	0.025 J
Nickel	**150**	2200	2.6	mg/kg	13	11.6	16 J+	43.8 J+	23.7 J+	28.9 J+	30 J+	18.1 J+	12.1	9.8 J+	13.3 J+
Potassium	--	--	--	mg/kg	813	790	978	1330	922	1290	1290	1700	709	1040	1180
Selenium	39	580	0.052	mg/kg	0.29 U	0.36 U	0.54 J	0.46 J	0.29 U	0.34 J	0.35 J	1.4 J	0.32 U	0.29 U	0.81 J
Silver	39	580	0.08	mg/kg	0.62 U	0.76 U	0.62 U	0.73 U	0.62 U	0.67 U	0.67 U	0.89 U	0.67 U	0.61 U	0.86 U
Sodium	--	--	--	mg/kg	42.8 U	52.8 U	171	104 J	60 J	71.5 J	72.4 J	120 J	46.6 U	152	477
Thallium	**0.078**	1.2	0.0014	mg/kg	0.13 U	0.15 U	0.13 U	0.15 U	0.13 U	0.14 U	0.14 U	0.18 U	0.14 U	0.12 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg	22.3	20.4	12.1	18	11.5	14	14.5	11.6	20.9	11	13.3
Zinc	2300	35000	37	mg/kg	38.2	37.1	59	129	128	81.1	82.3	89.8	37	41.6	41

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-002	CFMW-002	CFMW-002	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	6/2/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	23 - 28
				Sample Designation:	CFMW-002-SO-0-0.5	CFMW-002-SO-0.5-2	CFMW-002-SO-10-12	CFMW-003a-SO-0-0.5	CFMW-003a-SO-0.5-2	CFMW-003a-SO-10-12	CFMW-DUP9-SO	CFMW-003a-SO-23-28
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0095 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.0097 U	0.011 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0095 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.0097 U	0.011 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0095 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.0097 U	0.011 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0095 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.0097 U	0.011 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0095 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.0097 U	0.011 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0098 U	0.01 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0098 U	0.01 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.0098 U	0.01 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.0098 U	0.01 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0098 U	0.01 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-010	CFMW-010	CFMW-010	CFMW-011a
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	6/13/2016	5/18/2016	5/18/2016	5/18/2016	6/25/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2
				Sample Designation:	CFMW-008a-SO-0-0.5	CFMW-008a-SO-0.5-2	CFMW-008a-SO-10-12	CFMW-DUP14-SO	CFMW-010-SO-0-0.5	CFMW-010-SO-0.5-2.0	CFMW-010-SO-10-12	CFMW-Dup18-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0098 U	0.0094 U	0.0097 U	0.0096 U	0.01 U	0.01 U	0.0094 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0098 U	0.0094 U	0.0097 U	0.0096 U	0.01 U	0.01 U	0.0094 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0098 U	0.0094 U	0.0097 U	0.0096 U	0.01 U	0.01 U	0.0094 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0098 U	0.0094 U	0.0097 U	0.0096 U	0.01 U	0.01 U	0.0094 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0098 U	0.0094 U	0.0097 U	0.0096 U	0.01 U	0.01 U	0.0094 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0097 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0097 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0097 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0097 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0097 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0097 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0097 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0097 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0097 U	0.01 U	0.0099 U	0.01 U	0.01 U	0.0097 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-011a	CFMW-011a	CFMW-011a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a
				Sample Date:	6/25/2016	6/25/2016	6/25/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	68 - 73
				Sample Designation:	CFMW-011a-SO-0-0.5	CFMW-011a-SO-0.5-2	CFMW-011a-SO-10-12	CFMW-012A-SO-0-0.5	CFMW-012A-SO-0.5-2	CFMW-012A-SO-10-12	CFMW-DUP3-SO	CFMW-012A-SO-68-73
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.011 U	0.011 U	0.0091 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.011 U	0.011 U	0.0091 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.011 U	0.011 U	0.0091 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.011 U	0.011 U	0.0091 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.011 U	0.011 U	0.0091 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0098 U	0.011 U	0.0099 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0098 U	0.011 U	0.0099 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0098 U	0.011 U	0.0099 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0098 U	0.011 U	0.0099 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.011 U	0.0094 U	0.011 U	0.011 U	0.0098 U	0.011 U	0.0099 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-016a	CFMW-016a	CFMW-016a	CFMW-018	CFMW-018	CFMW-018	CFMW-018	CFMW-019a
				Sample Date:	6/21/2016	6/21/2016	6/21/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/25/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5
				Sample Designation:	CFMW-016a-SO-0-0.5	CFMW-016a-SO-0.5-2	CFMW-016a-SO-10-12	CFMW-018-SO-0-0.5	CFMW-018-SO-0.5-2.0	CFMW-018-SO-10-12	CFMW-DUP2-SO	CFMW-019a-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.01 U	0.0093 U	0.0093 U	0.0099 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.01 U	0.0093 U	0.0093 U	0.0099 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.01 U	0.0093 U	0.0093 U	0.0099 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.01 U	0.0093 U	0.0093 U	0.0099 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0096 U	0.01 U	0.01 U	0.01 U	0.0093 U	0.0093 U	0.0099 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-022	CFMW-022	CFMW-022	CFMW-022	CFMW-023a
				Sample Date:	5/25/2016	5/25/2016	5/25/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/17/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-019a-SO-0.5-2	CFMW-019a-SO-10-12	CFMW-DUP5-SO	CFMW-022-SO-0-0.5	CFMW-022-SO-0.5-2	CFMW-DUP12-SO	CFMW-022-SO-10-12	CFMW-023a-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.011 U	0.0093 U	0.01 U	0.01 U	0.0094 U	0.0094 U	0.01 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.011 U	0.0093 U	0.01 U	0.01 U	0.0094 U	0.0094 U	0.01 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.011 U	0.0093 U	0.01 U	0.01 U	0.0094 U	0.0094 U	0.01 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.011 U	0.0093 U	0.01 U	0.01 U	0.0094 U	0.0094 U	0.01 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.011 U	0.0093 U	0.01 U	0.01 U	0.0094 U	0.0094 U	0.01 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.0096 U	0.011 U	0.01 U	0.0097 U	0.0097 U	0.011 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.0096 U	0.011 U	0.01 U	0.0097 U	0.0097 U	0.011 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.0096 U	0.011 U	0.01 U	0.0097 U	0.0097 U	0.011 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.0096 U	0.011 U	0.01 U	0.0097 U	0.0097 U	0.011 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.0096 U	0.011 U	0.01 U	0.0097 U	0.0097 U	0.011 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-023a	CFMW-023a	CFMW-025a	CFMW-025a	CFMW-025a	CFMW-026	CFMW-026	CFMW-026
				Sample Date:	6/17/2016	6/17/2016	7/13/2016	7/13/2016	7/13/2016	6/14/2016	6/14/2016	6/14/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2
				Sample Designation:	CFMW-023a-SO-0.5-2	CFMW-023a-SO-10-12	CFMW-025a-SO-0-0.5	CFMW-025a-SO-0.5-2	CFMW-025a-SO-10-12	CFMW-026-SO-0-0.5	CFMW-026-SO-0.5-2	CFMW-DUP15-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.0097 U	0.012 U	0.0098 U	0.0093 U	0.013 U	0.01 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.0097 U	0.012 U	0.0098 U	0.0093 U	0.013 U	0.01 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.0097 U	0.012 U	0.0098 U	0.0093 U	0.013 U	0.01 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.0097 U	0.012 U	0.0098 U	0.0093 U	0.013 U	0.01 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.0097 U	0.012 U	0.0098 U	0.0093 U	0.013 U	0.01 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0096 U	0.013 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0096 U	0.013 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0096 U	0.013 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0096 U	0.013 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.01 U	0.012 U	0.01 U	0.0096 U	0.013 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-026	CFMW-027	CFMW-027	CFMW-027	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-028a
				Sample Date:	6/14/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	4.5 - 6	10 - 12
				Sample Designation:	CFMW-026-SO-10-12	CFMW-027-SO-0-0.5	CFMW-027-SO-0.5-2	CFMW-027-SO-10-12	CFMW-028a-SO-0-0.5	CFMW-028a-SO-0.5-2	CFMW-028a-SO-4.5-6	CFMW-028a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.013 U	0.013 U	0.0096 U	0.011 U	0.0099 U	0.016 U	0.0094 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.013 U	0.013 U	0.0096 U	0.011 U	0.0099 U	0.016 U	0.0094 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.013 U	0.013 U	0.0096 U	0.011 U	0.0099 U	0.016 U	0.0094 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.013 U	0.013 U	0.0096 U	0.011 U	0.0099 U	0.016 U	0.0094 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.013 U	0.013 U	0.0096 U	0.011 U	0.0099 U	0.016 U	0.0094 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.013 U	0.013 U	0.01 U	0.011 U	0.01 U	0.017 U	0.0097 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.013 U	0.013 U	0.01 U	0.011 U	0.01 U	0.017 U	0.0097 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.013 U	0.013 U	0.01 U	0.011 U	0.01 U	0.017 U	0.0097 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.013 U	0.013 U	0.01 U	0.011 U	0.01 U	0.017 U	0.0097 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.013 U	0.013 U	0.01 U	0.011 U	0.01 U	0.017 U	0.0097 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-028a	CFMW-029	CFMW-029	CFMW-029	CFMW-032a	CFMW-032a	CFMW-032a	CFMW-032a
				Sample Date:	6/30/2016	5/18/2016	5/18/2016	5/18/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12
				Sample Designation:	CFMW-DUP19-SO	CFMW-029-SO-0-0.5	CFMW-029-SO-0.5-2.0	CFMW-029-SO-10-12	CFMW-032a-SO-0-0.5	CFMW-032a-SO-0.5-2	CFMW-032a-SO-10-12	CFMW-Dup21-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.0095 U	0.0095 U	0.0094 U	0.01 U	0.0093 U	0.0096 U	0.0097 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.0095 U	0.0095 U	0.0094 U	0.01 U	0.0093 U	0.0096 U	0.0097 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.0095 U	0.0095 U	0.0094 U	0.01 U	0.0093 U	0.0096 U	0.0097 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0095 U	0.0095 U	0.0094 U	0.01 U	0.0093 U	0.0096 U	0.0097 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0095 U	0.0095 U	0.0094 U	0.01 U	0.0093 U	0.0096 U	0.0097 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.0099 U	0.0098 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.0099 U	0.0098 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.0099 U	0.0098 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.0099 U	0.0098 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.0099 U	0.0098 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-033	CFMW-033	CFMW-033	CFMW-034	CFMW-034	CFMW-034	CFMW-034	CFMW-035
				Sample Date:	7/1/2016	7/1/2016	7/1/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	6/1/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-033-SO-0-0.5	CFMW-033-SO-0.5-2	CFMW-033-SO-10-12	CFMW-034-SO-0-0.5	CFMW-034-SO-0.5-2	CFMW-DUP10-SO	CFMW-034-SO-10-12	CFMW-035-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.011 U	0.0099 U	0.0094 U	0.0096 U	0.0097 U	0.0094 U	0.0096 U	0.0098 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.011 U	0.0099 U	0.0094 U	0.0096 U	0.0097 U	0.0094 U	0.0096 U	0.0098 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.011 U	0.0099 U	0.0094 U	0.0096 U	0.0097 U	0.0094 U	0.0096 U	0.0098 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.011 U	0.0099 U	0.0094 U	0.0096 U	0.0097 U	0.0094 U	0.0096 U	0.0098 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.011 U	0.0099 U	0.0094 U	0.0096 U	0.0097 U	0.0094 U	0.0096 U	0.0098 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.01 U	0.0097 U	0.0099 U	0.01 U	0.0097 U	0.0099 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.01 U	0.0097 U	0.0099 U	0.01 U	0.0097 U	0.0099 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.01 U	0.0097 U	0.0099 U	0.01 U	0.0097 U	0.0099 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.01 U	0.0097 U	0.0099 U	0.01 U	0.0097 U	0.0099 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.01 U	0.0097 U	0.0099 U	0.01 U	0.0097 U	0.0099 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-035	CFMW-035	CFMW-035	CFMW-037	CFMW-037	CFMW-037	CFMW-038	CFMW-038
				Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/24/2016	6/24/2016	6/24/2016	6/25/2016	6/25/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-DUP11-SO	CFMW-035-SO-0.5-2	CFMW-035-SO-10-12	CFMW-037-SO-0-0.5	CFMW-037-SO-0.5-2	CFMW-037-SO-10-12	CFMW-038-SO-0-0.5	CFMW-038-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.01 U	0.0093 U	0.01 U	0.01 U	0.0095 U	0.0096 U	0.0098 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.01 U	0.0093 U	0.01 U	0.01 U	0.0095 U	0.0096 U	0.0098 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.01 U	0.0093 U	0.01 U	0.01 U	0.0095 U	0.0096 U	0.0098 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.01 U	0.0093 U	0.01 U	0.01 U	0.0095 U	0.0096 U	0.0098 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.01 U	0.0093 U	0.01 U	0.01 U	0.0095 U	0.0096 U	0.0098 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.01 U	0.0096 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.01 U	0.0096 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.01 U	0.0096 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.01 U	0.0096 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.01 U	0.0096 U	0.011 U	0.01 U	0.0098 U	0.0099 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-038	CFMW-040	CFMW-040	CFMW-040	CFMW-042	CFMW-042	CFMW-042	CFMW-042
			Sample Date:		6/25/2016	6/28/2016	6/28/2016	6/28/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12
			Sample Designation:		CFMW-038-SO-10-12	CFMW-040-SO-0-0.5	CFMW-040-SO-0.5-2	CFMW-040-SO-10-12	CFMW-042-SO-0-0.5	CFMW-042-SO-0.5-2	CFMW-DUP16-SO	CFMW-042-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.0098 U	0.0097 U	0.0099 U	0.014 U	0.01 U	0.0093 U	0.0092 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.0098 U	0.0097 U	0.0099 U	0.014 U	0.01 U	0.0093 U	0.0092 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.0098 U	0.0097 U	0.0099 U	0.014 U	0.01 U	0.0093 U	0.0092 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0098 U	0.0097 U	0.0099 U	0.014 U	0.01 U	0.0093 U	0.0092 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0098 U	0.0097 U	0.0099 U	0.014 U	0.01 U	0.0093 U	0.0092 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0098 U	0.01 U	0.01 U	0.01 U	0.015 U	0.01 U	0.0096 U	0.0095 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0098 U	0.01 U	0.01 U	0.01 U	0.015 U	0.01 U	0.0096 U	0.0095 U
Aroclor 1268	--	--	--	mg/kg	0.0098 U	0.01 U	0.01 U	0.01 U	0.015 U	0.01 U	0.0096 U	0.0095 U
Aroclor-1262	--	--	--	mg/kg	0.0098 U	0.01 U	0.01 U	0.01 U	0.015 U	0.01 U	0.0096 U	0.0095 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0098 U	0.01 U	0.01 U	0.01 U	0.015 U	0.01 U	0.0096 U	0.0095 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-043	CFMW-043	CFMW-043	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-045a	CFMW-045a
				Sample Date:	6/15/2016	6/15/2016	6/15/2016	7/20/2016	7/20/2016	7/20/2016	8/12/2016	8/12/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-043-SO-0-0.5	CFMW-043-SO-0.5-2	CFMW-043-SO-10-12	CFMW-044a-SO-0-0.5	CFMW-044a-SO-0.5-2	CFMW-044a-SO-10-12	CFMW-045a-SO-0-0.5	CFMW-045a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0099 U	0.01 U	0.0093 U	0.01 U	0.0095 U	0.0096 U	0.01 U	0.0097 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0099 U	0.01 U	0.0093 U	0.01 U	0.0095 U	0.0096 U	0.01 U	0.0097 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0099 U	0.01 U	0.0093 U	0.01 U	0.0095 U	0.0096 U	0.01 U	0.0097 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0099 U	0.01 U	0.0093 U	0.01 U	0.0095 U	0.0096 U	0.01 U	0.0097 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0099 U	0.01 U	0.0093 U	0.01 U	0.0095 U	0.0096 U	0.01 U	0.0097 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.011 U	0.0096 U	0.01 U	0.0098 U	0.0099 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.011 U	0.0096 U	0.01 U	0.0098 U	0.0099 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.011 U	0.0096 U	0.01 U	0.0098 U	0.0099 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.011 U	0.0096 U	0.01 U	0.0098 U	0.0099 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.011 U	0.0096 U	0.01 U	0.0098 U	0.0099 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-045a	CFMW-047	CFMW-047	CFMW-047	CFMW-049	CFMW-049a	CFMW-049a	CFMW-050
				Sample Date:	8/12/2016	6/21/2016	6/21/2016	6/21/2016	8/20/2016	8/20/2016	8/20/2016	6/22/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-045a-SO-10-12	CFMW-047-SO-0-0.5	CFMW-047-SO-0.5-2	CFMW-047-SO-10-12	CFMW-049-SO-0-0.5	CFMW-049a-SO-0.5-2	CFMW-049a-SO-10-12	CFMW-050-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0092 U	0.0096 U	0.01 U	0.0094 U	0.01 U	0.0094 U	0.0091 U	0.012 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0092 U	0.0096 U	0.01 U	0.0094 U	0.01 U	0.0094 U	0.0091 U	0.012 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0092 U	0.0096 U	0.01 U	0.0094 U	0.01 U	0.0094 U	0.0091 U	0.012 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0092 U	0.0096 U	0.01 U	0.0094 U	0.01 U	0.0094 U	0.0091 U	0.012 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0092 U	0.0096 U	0.01 U	0.0094 U	0.01 U	0.0094 U	0.0091 U	0.012 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0095 U	0.0099 U	0.011 U	0.0097 U	0.01 U	0.0098 U	0.0094 U	0.012 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0095 U	0.0099 U	0.011 U	0.0097 U	0.01 U	0.0098 U	0.0094 U	0.012 U
Aroclor 1268	--	--	--	mg/kg	0.0095 U	0.0099 U	0.011 U	0.0097 U	0.01 U	0.0098 U	0.0094 U	0.012 U
Aroclor-1262	--	--	--	mg/kg	0.0095 U	0.0099 U	0.011 U	0.0097 U	0.01 U	0.0098 U	0.0094 U	0.012 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0095 U	0.0099 U	0.011 U	0.0097 U	0.01 U	0.0098 U	0.0094 U	0.012 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-050	CFMW-050	CFMW-050	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-054
				Sample Date:	6/22/2016	6/22/2016	6/22/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	6/20/2016
				Sample Depth (ft-bls):	0.5 - 2	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-050-SO-0.5-2	CFMW-DUP17-SO	CFMW-050-SO-10-12	CFMW-DUP22-SO	CFMW-053a-SO-0-0.5	CFMW-053a-SO-0.5-2	CFMW-053a-SO-10-12	CFMW-054-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0099 U	0.0098 U	0.0095 U	0.0093 U	0.01 U	0.0094 U	0.0091 U	0.0097 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0099 U	0.0098 U	0.0095 U	0.0093 U	0.01 U	0.0094 U	0.0091 U	0.0097 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0099 U	0.0098 U	0.0095 U	0.0093 U	0.01 U	0.0094 U	0.0091 U	0.0097 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0098 U	0.0095 U	0.0093 U	0.01 U	0.0094 U	0.0091 U	0.0097 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0098 U	0.0095 U	0.0093 U	0.01 U	0.0094 U	0.0091 U	0.0097 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.01 U	0.0098 U	0.0096 U	0.011 U	0.0097 U	0.0094 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U	0.0098 U	0.0096 U	0.011 U	0.0097 U	0.0094 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U	0.0098 U	0.0096 U	0.011 U	0.0097 U	0.0094 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U	0.0098 U	0.0096 U	0.011 U	0.0097 U	0.0094 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.01 U	0.0098 U	0.0096 U	0.011 U	0.0097 U	0.0094 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-054	CFMW-054	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-057a	CFMW-057a
				Sample Date:	6/20/2016	6/20/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016	7/27/2016	7/27/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-054-SO-0.5-2	CFMW-054-SO-10-12	CFMW-DUP20-SO	CFMW-056a-SO-0-0.5	CFMW-056a-SO-0.5-2	CFMW-056a-SO-10-12	CFMW-057a-SO-0-0.5	CFMW-057a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0098 U	0.009 U	0.01 U	0.011 U	0.0097 U	0.0093 U	0.0099 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0098 U	0.009 U	0.01 U	0.011 U	0.0097 U	0.0093 U	0.0099 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0098 U	0.009 U	0.01 U	0.011 U	0.0097 U	0.0093 U	0.0099 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0098 U	0.009 U	0.01 U	0.011 U	0.0097 U	0.0093 U	0.0099 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0098 U	0.009 U	0.01 U	0.011 U	0.0097 U	0.0093 U	0.0099 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0093 U	0.011 U	0.011 U	0.01 U	0.0096 U	0.01 U	0.0099 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0093 U	0.011 U	0.011 U	0.01 U	0.0096 U	0.01 U	0.0099 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0093 U	0.011 U	0.011 U	0.01 U	0.0096 U	0.01 U	0.0099 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0093 U	0.011 U	0.011 U	0.01 U	0.0096 U	0.01 U	0.0099 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0093 U	0.011 U	0.011 U	0.01 U	0.0096 U	0.01 U	0.0099 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-057a	CFMW-059a	CFMW-059a	CFMW-059a	CFMW-061	CFMW-061	CFMW-061	CFMW-064
				Sample Date:	7/27/2016	7/22/2016	7/22/2016	7/22/2016	7/12/2016	7/12/2016	7/12/2016	7/11/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-057a-SO-10-12	CFMW-059a-SO-0-0.5	CFMW-059a-SO-0.5-2	CFMW-059a-SO-10-12	CFMW-061-SO-0-0.5	CFMW-061-SO-0.5-2	CFMW-061-SO-10-12	CFMW-064-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.011 U	0.0098 U	0.0092 U	0.0094 U	0.0093 U	0.0094 U	0.012 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.011 U	0.0098 U	0.0092 U	0.0094 U	0.0093 U	0.0094 U	0.012 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.011 U	0.0098 U	0.0092 U	0.0094 U	0.0093 U	0.0094 U	0.012 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.011 U	0.0098 U	0.0092 U	0.0094 U	0.0093 U	0.0094 U	0.012 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.011 U	0.0098 U	0.0092 U	0.0094 U	0.0093 U	0.0094 U	0.012 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.011 U	0.01 U	0.0095 U	0.0097 U	0.0096 U	0.0098 U	0.012 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.011 U	0.01 U	0.0095 U	0.0097 U	0.0096 U	0.0098 U	0.012 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.011 U	0.01 U	0.0095 U	0.0097 U	0.0096 U	0.0098 U	0.012 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.011 U	0.01 U	0.0095 U	0.0097 U	0.0096 U	0.0098 U	0.012 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.011 U	0.01 U	0.0095 U	0.0097 U	0.0096 U	0.0098 U	0.012 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-064	CFMW-064	CFSB-001	CFSB-001	CFSB-001	CFSB-002	CFSB-002	CFSB-002
				Sample Date:	7/11/2016	7/11/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFMW-064-SO-0.5-2	CFMW-064-SO-10-12	CFSB-001-SO-0-0.5	CFSB-001-SO-0.5-2	CFSB-001-SO-10-12	CFSB-002-SO-0-0.5	CFSB-002-SO-0.5-2	CFSB-002-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.0094 U	0.012 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.0094 U	0.012 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.0094 U	0.012 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.0094 U	0.012 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.0094 U	0.012 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0097 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.011 U	0.0099 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0097 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.011 U	0.0099 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0097 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.011 U	0.0099 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0097 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.011 U	0.0099 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0097 U	0.013 U	0.01 U	0.0098 U	0.011 U	0.011 U	0.0099 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-003	CFSB-003	CFSB-003	CFSB-004	CFSB-004	CFSB-004	CFSB-005	CFSB-005	CFSB-005
				Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-003-SO-0-0.5	CFSB-003-SO-0.5-2	CFSB-003-SO-10-12	CFSB-004-SO-0-0.5	CFSB-004-SO-0.5-2	CFSB-004-SO-10-12	CFSB-005-SO-0-0.5	CFSB-005-SO-0.5-2	CFSB-005-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.012 U	0.0098 U	0.0094 U	0.01 U	0.0098 U	0.0095 U	0.011 U	0.01 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.012 U	0.0098 U	0.0094 U	0.01 U	0.0098 U	0.0095 U	0.011 U	0.01 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.012 U	0.0098 U	0.0094 U	0.01 U	0.0098 U	0.0095 U	0.011 U	0.01 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.012 U	0.0098 U	0.0094 U	0.01 U	0.0098 U	0.0095 U	0.011 U	0.01 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.012 U	0.0098 U	0.0094 U	0.01 U	0.0098 U	0.0095 U	0.011 U	0.01 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0098 U	0.011 U	0.01 U	0.0099 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0098 U	0.011 U	0.01 U	0.0099 U
Aroclor 1268	--	--	--	mg/kg	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0098 U	0.011 U	0.01 U	0.0099 U
Aroclor-1262	--	--	--	mg/kg	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0098 U	0.011 U	0.01 U	0.0099 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0098 U	0.011 U	0.01 U	0.0099 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-006	CFSB-006	CFSB-006	CFSB-007	CFSB-007	CFSB-007	CFSB-008	CFSB-008	CFSB-008
			Sample Date:		5/23/2016	5/23/2016	5/23/2016	5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2
			Sample Designation:		CFSB-006-SO-0-0.5	CFSB-006-SO-0.5-2	CFSB-006-SO-10-12	CFSB-007-SO-0-0.5	CFSB-007-SO-0.5-2	CFSB-007-SO-10-12	CFSB-008-SO-0-0.5	CFSB-008-SO-0.5-2	CFSB-DUP4-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.011 U	0.0099 U	0.01 U	0.01 U	0.0094 U	0.011 U	0.01 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0097 U	0.011 U	0.011 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0097 U	0.011 U	0.011 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0097 U	0.011 U	0.011 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0097 U	0.011 U	0.011 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.012 U	0.01 U	0.01 U	0.01 U	0.0097 U	0.011 U	0.011 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-008	CFSB-009	CFSB-009	CFSB-009	CFSB-009	CFSB-010	CFSB-010	CFSB-011	CFSB-011
				Sample Date:	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/24/2016	5/21/2016	5/21/2016	5/19/2016	5/19/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-008-SO-10-12	CFSB-009-SO-0-0.5	CFSB-009-SO-0.5-2	CFSB-009-SO-10-12	CFSB-DUP6-SO	CFSB-010-SO-0.5-2	CFSB-010-SO-10-12	CFSB-011-SO-0-0.5	CFSB-011-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0093 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.0098 U	0.0093 U	0.011 U	0.0099 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0093 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.0098 U	0.0093 U	0.011 U	0.0099 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0093 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.0098 U	0.0093 U	0.011 U	0.0099 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0093 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.0098 U	0.0093 U	0.011 U	0.0099 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0093 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.0098 U	0.0093 U	0.011 U	0.0099 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.012 U	0.01 U	0.013 U	0.013 U	0.01 U	0.0096 U	0.011 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.012 U	0.01 U	0.013 U	0.013 U	0.01 U	0.0096 U	0.011 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.012 U	0.01 U	0.013 U	0.013 U	0.01 U	0.0096 U	0.011 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.012 U	0.01 U	0.013 U	0.013 U	0.01 U	0.0096 U	0.011 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.012 U	0.01 U	0.013 U	0.013 U	0.01 U	0.0096 U	0.011 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-011	CFSB-012	CFSB-012	CFSB-013	CFSB-013	CFSB-013	CFSB-014	CFSB-014
				Sample Date:	5/19/2016	5/28/2016	5/28/2016	5/19/2016	5/19/2016	5/19/2016	6/2/2016	6/2/2016
				Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-011-SO-10-12	CFSB-012-SO-0.5-2	CFSB-012-SO-10-12	CFSB-013-SO-0-0.5	CFSB-013-SO-0.5-2.0	CFSB-013-SO-10-12	CFSB-014-SO-0-0.5	CFSB-014-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0099 U	0.0095 U	0.0093 U	0.011 U	0.01 U	0.0093 U	0.011 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0099 U	0.0095 U	0.0093 U	0.011 U	0.01 U	0.0093 U	0.011 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0099 U	0.0095 U	0.0093 U	0.011 U	0.01 U	0.0093 U	0.011 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0095 U	0.0093 U	0.011 U	0.01 U	0.0093 U	0.011 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0095 U	0.0093 U	0.011 U	0.01 U	0.0093 U	0.011 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0098 U	0.0096 U	0.012 U	0.011 U	0.0097 U	0.011 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0098 U	0.0096 U	0.012 U	0.011 U	0.0097 U	0.011 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0098 U	0.0096 U	0.012 U	0.011 U	0.0097 U	0.011 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0098 U	0.0096 U	0.012 U	0.011 U	0.0097 U	0.011 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0098 U	0.0096 U	0.012 U	0.011 U	0.0097 U	0.011 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-014	CFSB-016	CFSB-016	CFSB-016	CFSB-019	CFSB-019	CFSB-019	CFSB-019	CFSB-021
				Sample Date:	6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/4/2016	6/4/2016	6/4/2016	6/13/2016	5/23/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-014-SO-10-12	CFSB-016-SO-0-0.5	CFSB-016-SO-0.5-2	CFSB-016-SO-10-12	CFSB-019-SO-0-0.5	CFSB-019-SO-0.5-2	CFSB-DUP13-SO	CFSB-019-SO-10-12	CFSB-021-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.016 U	0.012 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.016 U	0.012 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.016 U	0.012 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.016 U	0.012 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.016 U	0.012 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.017 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.0099 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.017 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.0099 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.017 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.0099 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.017 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.0099 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.017 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.0099 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-021	CFSB-021	CFSB-022	CFSB-022	CFSB-022	CFSB-025	CFSB-025	CFSB-025	CFSB-026
				Sample Date:	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-021-SO-0.5-2	CFSB-021-SO-10-12	CFSB-022-SO-0-0.5	CFSB-022-SO-0.5-2	CFSB-022-SO-10-12	CFSB-025-SO-0-0.5	CFSB-025-SO-0.5-2	CFSB-025-SO-10-12	CFSB-026-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0095 U	0.0093 U	0.011 U	0.011 U	0.0094 U	0.017 U	0.019 U	0.01 U	0.023 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0095 U	0.0093 U	0.011 U	0.011 U	0.0094 U	0.017 U	0.019 U	0.01 U	0.023 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0095 U	0.0093 U	0.011 U	0.011 U	0.0094 U	0.017 U	0.019 U	0.01 U	0.023 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0095 U	0.0093 U	0.011 U	0.011 U	0.0094 U	0.017 U	0.019 U	0.01 U	0.023 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0095 U	0.0093 U	0.011 U	0.011 U	0.0094 U	0.017 U	0.019 U	0.01 U	0.023 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.0096 U	0.011 U	0.011 U	0.0098 U	0.017 U	0.02 U	0.01 U	0.024 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.0096 U	0.011 U	0.011 U	0.0098 U	0.017 U	0.02 U	0.01 U	0.024 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.0096 U	0.011 U	0.011 U	0.0098 U	0.017 U	0.02 U	0.01 U	0.024 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.0096 U	0.011 U	0.011 U	0.0098 U	0.017 U	0.02 U	0.01 U	0.024 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.0096 U	0.011 U	0.011 U	0.0098 U	0.017 U	0.02 U	0.01 U	0.024 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-026	CFSB-026	CFSB-027	CFSB-027	CFSB-027	CFSB-028	CFSB-028	CFSB-028	CFSB-029
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	7/18/2016	7/18/2016	7/18/2016	5/23/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	10 - 12	0 - 0.5
				Sample Designation:	CFSB-026-SO-0.5-2	CFSB-026-SO-10-12	CFSB-027-SO-0-0.5	CFSB-027-SO-0.5-2	CFSB-027-SO-10-12	CFSB-028-SO-0.5-2	CFSB-028-SO-0-0.5	CFSB-028-SO-10-12	CFSB-029-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.021 U	0.0093 U	0.0095 U	0.01 U	0.0097 U	0.0097 U	0.01 U	0.0095 U	0.0097 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.021 U	0.0093 U	0.0095 U	0.01 U	0.0097 U	0.0097 U	0.01 U	0.0095 U	0.0097 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.021 U	0.0093 U	0.0095 U	0.01 U	0.0097 U	0.0097 U	0.01 U	0.0095 U	0.0097 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.021 U	0.0093 U	0.0095 U	0.01 U	0.0097 U	0.0097 U	0.01 U	0.0095 U	0.0097 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.021 U	0.0093 U	0.0095 U	0.01 U	0.0097 U	0.0097 U	0.01 U	0.0095 U	0.0097 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.022 U	0.0096 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.022 U	0.0096 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.022 U	0.0096 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.022 U	0.0096 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.022 U	0.0096 U	0.0099 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.01 U

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-029	CFSB-029	CFSB-030	CFSB-030	CFSB-030	CFSB-033	CFSB-033	CFSB-033	CFSB-034
				Sample Date:	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	5/23/2016	5/23/2016	5/23/2016	5/31/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-029-SO-0.5-2	CFSB-029-SO-10-12	CFSB-030-SO-0-0.5	CFSB-030-SO-0.5-2	CFSB-030-SO-10-12	CFSB-033-SO-0-0.5	CFSB-033-SO-0.5-2	CFSB-033-SO-10-12	CFSB-034-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0095 U	0.0098 U	0.012 U	0.01 U	0.0094 U	0.0099 U	0.0097 U	0.0093 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0095 U	0.0098 U	0.012 U	0.01 U	0.0094 U	0.0099 U	0.0097 U	0.0093 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0095 U	0.0098 U	0.012 U	0.01 U	0.0094 U	0.0099 U	0.0097 U	0.0093 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0095 U	0.0098 U	0.012 U	0.01 U	0.0094 U	0.0099 U	0.0097 U	0.0093 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0095 U	0.0098 U	0.012 U	0.01 U	0.0094 U	0.0099 U	0.0097 U	0.0093 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0098 U	0.01 U	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0098 U	0.01 U	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.0098 U	0.01 U	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.0098 U	0.01 U	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0098 U	0.01 U	0.012 U	0.01 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-034	CFSB-034	CFSB-035	CFSB-035	CFSB-035	CFSB-036	CFSB-036	CFSB-036	CFSB-037
				Sample Date:	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-034-SO-0.5-2	CFSB-034-SO-10-12	CFSB-035-SO-0-0.5	CFSB-035-SO-0.5-2	CFSB-035-SO-10-12	CFSB-036-SO-0-0.5	CFSB-036-SO-0.5-2	CFSB-036-SO-10-12	CFSB-037-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.011 U	0.01 U	0.0099 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.011 U	0.01 U	0.0099 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.011 U	0.01 U	0.0099 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.011 U	0.01 U	0.0099 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.011 U	0.01 U	0.0099 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.011 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-037	CFSB-037	CFSB-038	CFSB-038	CFSB-038	CFSB-040	CFSB-040	CFSB-040	CFSB-042
				Sample Date:	5/31/2016	5/31/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-037-SO-0.5-2	CFSB-037-SO-10-12	CFSB-038-SO-0-0.5	CFSB-038-SO-0.5-2	CFSB-038-SO-10-12	CFSB-040-SO-0-0.5	CFSB-040-SO-0.5-2	CFSB-040-SO-10-12	CFSB-042-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0098 U	0.011 U	0.0098 U	0.0093 U	0.0093 U	0.0096 U	0.0094 U	0.0094 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0098 U	0.011 U	0.0098 U	0.0093 U	0.0093 U	0.0096 U	0.0094 U	0.0094 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0098 U	0.011 U	0.0098 U	0.0093 U	0.0093 U	0.0096 U	0.0094 U	0.0094 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0098 U	0.011 U	0.0098 U	0.0093 U	0.0093 U	0.0096 U	0.0094 U	0.0094 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0098 U	0.011 U	0.0098 U	0.0093 U	0.0093 U	0.0096 U	0.0094 U	0.0094 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.011 U	0.01 U	0.0096 U	0.0096 U	0.0099 U	0.0098 U	0.0097 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.011 U	0.01 U	0.0096 U	0.0096 U	0.0099 U	0.0098 U	0.0097 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.011 U	0.01 U	0.0096 U	0.0096 U	0.0099 U	0.0098 U	0.0097 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.011 U	0.01 U	0.0096 U	0.0096 U	0.0099 U	0.0098 U	0.0097 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.011 U	0.01 U	0.0096 U	0.0096 U	0.0099 U	0.0098 U	0.0097 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-042	CFSB-042	CFSB-044	CFSB-044	CFSB-044	CFSB-045	CFSB-045	CFSB-045	CFSB-046
				Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-042-SO-0.5-2	CFSB-042-SO-10-12	CFSB-044-SO-0-0.5	CFSB-044-SO-0.5-2.0	CFSB-044-SO-10-12	CFSB-045-SO-0-0.5	CFSB-045-SO-0.5-2	CFSB-045-SO-10-12	CFSB-046-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.0093 U	0.0098 U	0.0098 U	0.0093 U	0.0093 U	0.0094 U	0.0093 U	0.0093 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.0093 U	0.0098 U	0.0098 U	0.0093 U	0.0093 U	0.0094 U	0.0093 U	0.0093 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.0093 U	0.0098 U	0.0098 U	0.0093 U	0.0093 U	0.0094 U	0.0093 U	0.0093 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0093 U	0.0098 U	0.0098 U	0.0093 U	0.0093 U	0.0094 U	0.0093 U	0.0093 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0093 U	0.0098 U	0.0098 U	0.0093 U	0.0093 U	0.0094 U	0.0093 U	0.0093 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0096 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.0097 U	0.0096 U	0.0096 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0096 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.0097 U	0.0096 U	0.0096 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0096 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.0097 U	0.0096 U	0.0096 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0096 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.0097 U	0.0096 U	0.0096 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0096 U	0.01 U	0.01 U	0.0096 U	0.0096 U	0.0097 U	0.0096 U	0.0096 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-046	CFSB-046	CFSB-048	CFSB-048	CFSB-048	CFSB-049	CFSB-049	CFSB-050
				Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/28/2016	5/28/2016	5/21/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-046-SO-0.5-2.0	CFSB-046-SO-10-12	CFSB-048-SO-0-0.5	CFSB-048-SO-0.5-2.0	CFSB-048-SO-10-12	CFSB-049-SO-0.5-2	CFSB-049-SO-10-12	CFSB-050-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.0094 U	0.01 U	0.0099 U	0.0096 U	0.0096 U	0.0092 U	0.0099 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.0094 U	0.01 U	0.0099 U	0.0096 U	0.0096 U	0.0092 U	0.0099 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.0094 U	0.01 U	0.0099 U	0.0096 U	0.0096 U	0.0092 U	0.0099 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0094 U	0.01 U	0.0099 U	0.0096 U	0.0096 U	0.0092 U	0.0099 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0094 U	0.01 U	0.0099 U	0.0096 U	0.0096 U	0.0092 U	0.0099 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.0097 U	0.011 U	0.01 U	0.0099 U	0.0099 U	0.0095 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.0097 U	0.011 U	0.01 U	0.0099 U	0.0099 U	0.0095 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.0097 U	0.011 U	0.01 U	0.0099 U	0.0099 U	0.0095 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.0097 U	0.011 U	0.01 U	0.0099 U	0.0099 U	0.0095 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.0097 U	0.011 U	0.01 U	0.0099 U	0.0099 U	0.0095 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-050	CFSB-050	CFSB-051	CFSB-051	CFSB-051	CFSB-052	CFSB-052	CFSB-053	CFSB-053
				Sample Date:	5/21/2016	5/21/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/31/2016	5/31/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
				Sample Designation:	CFSB-050-SO-0.5-2	CFSB-050-SO-10-12	CFSB-051-SO-0-0.5	CFSB-051-SO-0.5-2	CFSB-051-SO-10-12	CFSB-052-SO-0.5-2	CFSB-052-SO-10-12	CFSB-053-SO-0.5-2	CFSB-053-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.0093 U	0.0095 U	0.0095 U	0.0094 U	0.0093 U	0.0094 U	0.01 U	0.0094 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.0093 U	0.0095 U	0.0095 U	0.0094 U	0.0093 U	0.0094 U	0.01 U	0.0094 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.0093 U	0.0095 U	0.0095 U	0.0094 U	0.0093 U	0.0094 U	0.01 U	0.0094 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.0093 U	0.0095 U	0.0095 U	0.0094 U	0.0093 U	0.0094 U	0.01 U	0.0094 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.0093 U	0.0095 U	0.0095 U	0.0094 U	0.0093 U	0.0094 U	0.01 U	0.0094 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0096 U	0.0098 U	0.0098 U	0.0097 U	0.0096 U	0.0097 U	0.011 U	0.0097 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0096 U	0.0098 U	0.0098 U	0.0097 U	0.0096 U	0.0097 U	0.011 U	0.0097 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0096 U	0.0098 U	0.0098 U	0.0097 U	0.0096 U	0.0097 U	0.011 U	0.0097 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0096 U	0.0098 U	0.0098 U	0.0097 U	0.0096 U	0.0097 U	0.011 U	0.0097 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0096 U	0.0098 U	0.0098 U	0.0097 U	0.0096 U	0.0097 U	0.011 U	0.0097 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-054	CFSB-054	CFSB-054	CFSB-055	CFSB-055	CFSB-055	CFSB-057	CFSB-057	CFSB-057
				Sample Date:	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-054-SO-0-0.5	CFSB-054-SO-0.5-2	CFSB-054-SO-10-12	CFSB-055-SO-0-0.5	CFSB-055-SO-0.5-2	CFSB-055-SO-10-12	CFSB-057-SO-0-0.5	CFSB-057-SO-0.5-2	CFSB-057-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.0096 U	0.0095 U	0.0097 U	0.0095 U	0.01 U	0.0096 U	0.0095 U	0.0095 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.0096 U	0.0095 U	0.0097 U	0.0095 U	0.01 U	0.0096 U	0.0095 U	0.0095 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.0096 U	0.0095 U	0.0097 U	0.0095 U	0.01 U	0.0096 U	0.0095 U	0.0095 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0096 U	0.0095 U	0.0097 U	0.0095 U	0.01 U	0.0096 U	0.0095 U	0.0095 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0096 U	0.0095 U	0.0097 U	0.0095 U	0.01 U	0.0096 U	0.0095 U	0.0095 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.0099 U	0.0099 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.0099 U	0.0099 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.0099 U	0.0099 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.0099 U	0.0099 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.0099 U	0.0099 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-059	CFSB-059	CFSB-059	CFSB-059	CFSB-060	CFSB-060	CFSB-060	CFSB-062	CFSB-062
				Sample Date:	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/27/2016	5/27/2016	5/27/2016	6/2/2016	6/2/2016
				Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-DUP8-SO	CFSB-059-SO-0-0.5	CFSB-059-SO-0.5-2	CFSB-059-SO-10-12	CFSB-060-SO-0-0.5	CFSB-060-SO-0.5-2	CFSB-060-SO-10-12	CFSB-062-SO-0-0.5	CFSB-062-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.0096 U	0.0098 U	0.0095 U	0.0095 U	0.0093 U	0.0093 U	0.01 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.0096 U	0.0098 U	0.0095 U	0.0095 U	0.0093 U	0.0093 U	0.01 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.0096 U	0.0098 U	0.0095 U	0.0095 U	0.0093 U	0.0093 U	0.01 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0096 U	0.0098 U	0.0095 U	0.0095 U	0.0093 U	0.0093 U	0.01 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0096 U	0.0098 U	0.0095 U	0.0095 U	0.0093 U	0.0093 U	0.01 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.0099 U	0.01 U	0.0098 U	0.0098 U	0.0096 U	0.0096 U	0.011 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.0099 U	0.01 U	0.0098 U	0.0098 U	0.0096 U	0.0096 U	0.011 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.0099 U	0.01 U	0.0098 U	0.0098 U	0.0096 U	0.0096 U	0.011 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.0099 U	0.01 U	0.0098 U	0.0098 U	0.0096 U	0.0096 U	0.011 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.0099 U	0.01 U	0.0098 U	0.0098 U	0.0096 U	0.0096 U	0.011 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-062	CFSB-064	CFSB-064	CFSB-064	CFSB-065	CFSB-065	CFSB-065	CFSB-066	CFSB-066
				Sample Date:	6/2/2016	6/3/2016	6/3/2016	6/3/2016	6/2/2016	6/2/2016	6/2/2016	5/27/2016	5/27/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-062-SO-10-12	CFSB-064-SO-0-0.5	CFSB-064-SO-0.5-2	CFSB-064-SO-10-12	CFSB-065-SO-0-0.5	CFSB-065-SO-0.5-2	CFSB-065-SO-10-12	CFSB-066-SO-0-0.5	CFSB-066-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0095 U	0.01 U	0.011 U	0.0095 U	0.011 U	0.011 U	0.0095 U	0.0096 U	0.0093 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0095 U	0.01 U	0.011 U	0.0095 U	0.011 U	0.011 U	0.0095 U	0.0096 U	0.0093 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0095 U	0.01 U	0.011 U	0.0095 U	0.011 U	0.011 U	0.0095 U	0.0096 U	0.0093 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0095 U	0.01 U	0.011 U	0.0095 U	0.011 U	0.011 U	0.0095 U	0.0096 U	0.0093 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0095 U	0.01 U	0.011 U	0.0095 U	0.011 U	0.011 U	0.0095 U	0.0096 U	0.0093 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0098 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.0098 U	0.0099 U	0.0096 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0098 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.0098 U	0.0099 U	0.0096 U
Aroclor 1268	--	--	--	mg/kg	0.0098 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.0098 U	0.0099 U	0.0096 U
Aroclor-1262	--	--	--	mg/kg	0.0098 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.0098 U	0.0099 U	0.0096 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0098 U	0.011 U	0.011 U	0.0099 U	0.011 U	0.012 U	0.0098 U	0.0099 U	0.0096 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-066	CFSB-068	CFSB-068	CFSB-069	CFSB-069	CFSB-069	CFSB-071	CFSB-071	CFSB-071
				Sample Date:	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016
				Sample Depth (ft-bls):	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-066-SO-10-12	CFSB-068-SO-0.5-2	CFSB-068-SO-10-12	CFSB-069-SO-0-0.5	CFSB-069-SO-0.5-2	CFSB-069-SO-10-12	CFSB-071-SO-0-0.5	CFSB-071-SO-0.5-2	CFSB-071-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0092 U	0.0094 U	0.0092 U	0.0096 U	0.0094 U	0.0096 U	0.0096 U	0.0095 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0092 U	0.0094 U	0.0092 U	0.0096 U	0.0094 U	0.0096 U	0.0096 U	0.0095 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0092 U	0.0094 U	0.0092 U	0.0096 U	0.0094 U	0.0096 U	0.0096 U	0.0095 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0092 U	0.0094 U	0.0092 U	0.0096 U	0.0094 U	0.0096 U	0.0096 U	0.0095 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0092 U	0.0094 U	0.0092 U	0.0096 U	0.0094 U	0.0096 U	0.0096 U	0.0095 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0096 U	0.0097 U	0.0095 U	0.0099 U	0.0097 U	0.0099 U	0.01 U	0.0098 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0096 U	0.0097 U	0.0095 U	0.0099 U	0.0097 U	0.0099 U	0.01 U	0.0098 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0096 U	0.0097 U	0.0095 U	0.0099 U	0.0097 U	0.0099 U	0.01 U	0.0098 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0096 U	0.0097 U	0.0095 U	0.0099 U	0.0097 U	0.0099 U	0.01 U	0.0098 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0096 U	0.0097 U	0.0095 U	0.0099 U	0.0097 U	0.0099 U	0.01 U	0.0098 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-071	CFSB-073	CFSB-073	CFSB-073	CFSB-074	CFSB-074	CFSB-074	CFSB-075	CFSB-075
				Sample Date:	5/27/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-DUP7-SO	CFSB-073-SO-0-0.5	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12	CFSB-074-SO-0-0.5	CFSB-074-SO-0.5-2	CFSB-074-SO-10-12	CFSB-075-SO-0-0.5	CFSB-075-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.0094 U	0.0098 U	0.0092 U	0.0094 U	0.0092 U	0.0092 U	0.0098 U	0.0097 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.0094 U	0.0098 U	0.0092 U	0.0094 U	0.0092 U	0.0092 U	0.0098 U	0.0097 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.0094 U	0.0098 U	0.0092 U	0.0094 U	0.0092 U	0.0092 U	0.0098 U	0.0097 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0094 U	0.0098 U	0.0092 U	0.0094 U	0.0092 U	0.0092 U	0.0098 U	0.0097 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0094 U	0.0098 U	0.0092 U	0.0094 U	0.0092 U	0.0092 U	0.0098 U	0.0097 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.0098 U	0.01 U	0.0096 U	0.0097 U	0.0095 U	0.0095 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.0098 U	0.01 U	0.0096 U	0.0097 U	0.0095 U	0.0095 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.0098 U	0.01 U	0.0096 U	0.0097 U	0.0095 U	0.0095 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.0098 U	0.01 U	0.0096 U	0.0097 U	0.0095 U	0.0095 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.0098 U	0.01 U	0.0096 U	0.0097 U	0.0095 U	0.0095 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-075	CFSB-079	CFSB-079	CFSB-079	CFSB-080	CFSB-080	CFSB-080	CFSB-082	CFSB-082
				Sample Date:	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-075-SO-10-12	CFSB-079-SO-0-0.5	CFSB-079-SO-0.5-2	CFSB-079-SO-10-12	CFSB-080-SO-0-0.5	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12	CFSB-082-SO-0-0.5	CFSB-082-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.0099 U	0.0095 U	0.0094 U	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.0099 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.0099 U	0.0095 U	0.0094 U	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.0099 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.0099 U	0.0095 U	0.0094 U	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.0099 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0099 U	0.0095 U	0.0094 U	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.0099 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.0099 U	0.0095 U	0.0094 U	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.0099 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.01 U	0.0099 U	0.0097 U	0.01 U	0.01 U	0.0097 U	0.0098 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U	0.0099 U	0.0097 U	0.01 U	0.01 U	0.0097 U	0.0098 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U	0.0099 U	0.0097 U	0.01 U	0.01 U	0.0097 U	0.0098 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U	0.0099 U	0.0097 U	0.01 U	0.01 U	0.0097 U	0.0098 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.01 U	0.0099 U	0.0097 U	0.01 U	0.01 U	0.0097 U	0.0098 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-082	CFSB-084	CFSB-084	CFSB-084	CFSB-086	CFSB-086	CFSB-086	CFSB-087	CFSB-087
				Sample Date:	6/1/2016	5/27/2016	5/27/2016	5/27/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-082-SO-10-12	CFSB-084-SO-0-0.5	CFSB-084-SO-0.5-2	CFSB-084-SO-10-12	CFSB-086-SO-0-0.5	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0-0.5	CFSB-087-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0099 U	0.0095 U	0.01 U	0.0094 U	0.0094 U	0.0097 U	0.0093 U	0.0098 U	0.0097 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0099 U	0.0095 U	0.01 U	0.0094 U	0.0094 U	0.0097 U	0.0093 U	0.0098 U	0.0097 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0099 U	0.0095 U	0.01 U	0.0094 U	0.0094 U	0.0097 U	0.0093 U	0.0098 U	0.0097 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0095 U	0.01 U	0.0094 U	0.0094 U	0.0097 U	0.0093 U	0.0098 U	0.0097 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0099 U	0.0095 U	0.01 U	0.0094 U	0.0094 U	0.0097 U	0.0093 U	0.0098 U	0.0097 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.01 U	0.0097 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.01 U	0.0097 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.01 U	0.0097 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.01 U	0.0097 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.01 U	0.0097 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-087	CFSB-088	CFSB-088	CFSB-088	CFSB-092	CFSB-092	CFSB-092	CFSB-094	CFSB-094
				Sample Date:	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/24/2016	5/24/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-087-SO-10-12	CFSB-088-SO-0-0.5	CFSB-088-SO-0.5-2	CFSB-088-SO-10-12	CFSB-092-SO-0-0.5	CFSB-092-SO-0.5-2	CFSB-092-SO-10-12	CFSB-094-SO-0-0.5	CFSB-094-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U	0.0097 U	0.0093 U	0.0096 U	0.0093 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U	0.0097 U	0.0093 U	0.0096 U	0.0093 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U	0.0097 U	0.0093 U	0.0096 U	0.0093 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U	0.0097 U	0.0093 U	0.0096 U	0.0093 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U	0.0097 U	0.0093 U	0.0096 U	0.0093 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.01 U	0.0099 U	0.0096 U	0.0099 U	0.01 U	0.0096 U	0.0099 U	0.0096 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.01 U	0.0099 U	0.0096 U	0.0099 U	0.01 U	0.0096 U	0.0099 U	0.0096 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.01 U	0.0099 U	0.0096 U	0.0099 U	0.01 U	0.0096 U	0.0099 U	0.0096 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.01 U	0.0099 U	0.0096 U	0.0099 U	0.01 U	0.0096 U	0.0099 U	0.0096 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.01 U	0.0099 U	0.0096 U	0.0099 U	0.01 U	0.0096 U	0.0099 U	0.0096 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-094	CFSB-095	CFSB-095	CFSB-095	CFSB-097	CFSB-097	CFSB-097	CFSB-098	CFSB-098
				Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-094-SO-10-12	CFSB-095-SO-0-0.5	CFSB-095-SO-0.5-2.0	CFSB-095-SO-10-12	CFSB-097-SO-0-0.5	CFSB-097-SO-0.5-2	CFSB-097-SO-10-12	CFSB-098-SO-0-0.5	CFSB-098-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0092 U	0.01 U	0.0094 U	0.0099 U	0.01 U	0.01 U	0.0091 U	0.01 U	0.0094 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0092 U	0.01 U	0.0094 U	0.0099 U	0.01 U	0.01 U	0.0091 U	0.01 U	0.0094 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0092 U	0.01 U	0.0094 U	0.0099 U	0.01 U	0.01 U	0.0091 U	0.01 U	0.0094 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0092 U	0.01 U	0.0094 U	0.0099 U	0.01 U	0.01 U	0.0091 U	0.01 U	0.0094 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0092 U	0.01 U	0.0094 U	0.0099 U	0.01 U	0.01 U	0.0091 U	0.01 U	0.0094 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0095 U	0.01 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.0094 U	0.01 U	0.0097 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0095 U	0.01 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.0094 U	0.01 U	0.0097 U
Aroclor 1268	--	--	--	mg/kg	0.0095 U	0.01 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.0094 U	0.01 U	0.0097 U
Aroclor-1262	--	--	--	mg/kg	0.0095 U	0.01 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.0094 U	0.01 U	0.0097 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0095 U	0.01 U	0.0098 U	0.01 U	0.011 U	0.01 U	0.0094 U	0.01 U	0.0097 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-098	CFSB-099	CFSB-099	CFSB-099	CFSB-100	CFSB-100	CFSB-100	CFSB-101	CFSB-101
				Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	7/21/2016	7/21/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-098-SO-10-12	CFSB-099-SO-0-0.5	CFSB-099-SO-0.5-2	CFSB-099-SO-10-12	CFSB-100-SO-0-0.5	CFSB-100-SO-0.5-2	CFSB-100-SO-10-12	CFSB-101-SO-0-0.5	CFSB-101-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0093 U	0.012 U	0.0093 U	0.0093 U	0.0093 U	0.0094 U	0.0097 U	0.012 U	0.012 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0093 U	0.012 U	0.0093 U	0.0093 U	0.0093 U	0.0094 U	0.0097 U	0.012 U	0.012 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0093 U	0.012 U	0.0093 U	0.0093 U	0.0093 U	0.0094 U	0.0097 U	0.012 U	0.012 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0093 U	0.012 U	0.0093 U	0.0093 U	0.0093 U	0.0094 U	0.0097 U	0.012 U	0.012 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0093 U	0.012 U	0.0093 U	0.0093 U	0.0093 U	0.0094 U	0.0097 U	0.012 U	0.012 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0096 U	0.012 U	0.0096 U	0.0097 U	0.0096 U	0.0097 U	0.01 U	0.013 U	0.012 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0096 U	0.012 U	0.0096 U	0.0097 U	0.0096 U	0.0097 U	0.01 U	0.013 U	0.012 U
Aroclor 1268	--	--	--	mg/kg	0.0096 U	0.012 U	0.0096 U	0.0097 U	0.0096 U	0.0097 U	0.01 U	0.013 U	0.012 U
Aroclor-1262	--	--	--	mg/kg	0.0096 U	0.012 U	0.0096 U	0.0097 U	0.0096 U	0.0097 U	0.01 U	0.013 U	0.012 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0096 U	0.012 U	0.0096 U	0.0097 U	0.0096 U	0.0097 U	0.01 U	0.013 U	0.012 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-101	CFSB-102	CFSB-102	CFSB-102	CFSB-104	CFSB-104	CFSB-104	CFSB-109	CFSB-109
				Sample Date:	7/21/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-101-SO-10-12	CFSB-102-SO-0-0.5	CFSB-102-SO-0.5-2	CFSB-102-SO-10-12	CFSB-104-SO-0-0.5	CFSB-104-SO-0.5-2	CFSB-104-SO-10-12	CFSB-109-SO-0-0.5	CFSB-109-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.012 U	0.012 U	0.01 U	0.0097 U	0.015 U	0.013 U	0.0099 U	0.018 U	0.014 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.012 U	0.012 U	0.01 U	0.0097 U	0.015 U	0.013 U	0.0099 U	0.018 U	0.014 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.012 U	0.012 U	0.01 U	0.0097 U	0.015 U	0.013 U	0.0099 U	0.018 U	0.014 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.012 U	0.012 U	0.01 U	0.0097 U	0.015 U	0.013 U	0.0099 U	0.018 U	0.014 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.012 U	0.012 U	0.01 U	0.0097 U	0.015 U	0.013 U	0.0099 U	0.018 U	0.014 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.015 U	0.014 U	0.01 U	0.019 U	0.015 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.015 U	0.014 U	0.01 U	0.019 U	0.015 U
Aroclor 1268	--	--	--	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.015 U	0.014 U	0.01 U	0.019 U	0.015 U
Aroclor-1262	--	--	--	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.015 U	0.014 U	0.01 U	0.019 U	0.015 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.015 U	0.014 U	0.01 U	0.019 U	0.015 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-109	CFSB-110	CFSB-110	CFSB-110	CFSB-113	CFSB-113	CFSB-113	CFSB-114	CFSB-114
				Sample Date:	7/13/2016	7/14/2016	7/14/2016	7/14/2016	8/31/2016	8/31/2016	8/31/2016	7/12/2016	7/12/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-109-SO-10-12	CFSB-110-SO-0-0.5	CFSB-110-SO-0.5-2	CFSB-110-SO-10-12	CFSB-113-SO-0-0.5	CFSB-113-SO-0.5-2	CFSB-113-SO-2-4	CFSB-114-SO-0-0.5	CFSB-114-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.02 U	0.012 U	0.0094 U	0.011 U	0.0098 U	0.0096 U	0.0097 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.02 U	0.012 U	0.0094 U	0.011 U	0.0098 U	0.0096 U	0.0097 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.02 U	0.012 U	0.0094 U	0.011 U	0.0098 U	0.0096 U	0.0097 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.02 U	0.012 U	0.0094 U	0.011 U	0.0098 U	0.0096 U	0.0097 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.02 U	0.012 U	0.0094 U	0.011 U	0.0098 U	0.0096 U	0.0097 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.021 U	0.012 U	0.0097 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.021 U	0.012 U	0.0097 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.021 U	0.012 U	0.0097 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.021 U	0.012 U	0.0097 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.021 U	0.012 U	0.0097 U	0.012 U	0.01 U	0.0099 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-114	CFSB-115	CFSB-115	CFSB-115	CFSB-116	CFSB-116	CFSB-116	CFSB-118	CFSB-118
				Sample Date:	7/12/2016	8/31/2016	8/31/2016	8/31/2016	7/22/2016	7/22/2016	7/22/2016	7/21/2016	7/21/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	2 - 4	10 - 12	0 - 0.5	0.5 - 2	0 - 0.5	10 - 12
				Sample Designation:	CFSB-114-SO-10-12	CFSB-115-SO-0-0.5	CFSB-115-SO-0.5-2	CFSB-115-SO-2-4	CFSB-116-SO-10-12	CFSB-116-SO-0-0.5	CFSB-116-SO-0.5-2	CFSB-118-SO-0-0.5	CFSB-118-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.01 U	0.0094 U	0.0095 U	0.011 U	0.014 U	0.012 U	0.011 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.011 U	0.015 U	0.012 U	0.012 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.011 U	0.015 U	0.012 U	0.012 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.011 U	0.015 U	0.012 U	0.012 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.011 U	0.015 U	0.012 U	0.012 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.011 U	0.0097 U	0.0098 U	0.011 U	0.015 U	0.012 U	0.012 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-118	CFSB-119	CFSB-119	CFSB-119	CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121
				Sample Date:	7/21/2016	7/12/2016	7/12/2016	7/12/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5
				Sample Designation:	CFSB-118-SO-0.5-2	CFSB-119-SO-0-0.5	CFSB-119-SO-0.5-2	CFSB-119-SO-10-12	CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-DUP1-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.012 U	0.0094 U	0.01 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.012 U	0.0094 U	0.01 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.012 U	0.0094 U	0.01 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.012 U	0.0094 U	0.01 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.01 U	0.01 U	0.0094 U	0.01 U	0.012 U	0.0094 U	0.01 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.011 U	0.011 U	0.0097 U	0.011 U	0.012 U	0.0097 U	0.01 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.011 U	0.011 U	0.0097 U	0.011 U	0.012 U	0.0097 U	0.01 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.0097 U	0.011 U	0.012 U	0.0097 U	0.01 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.0097 U	0.011 U	0.012 U	0.0097 U	0.01 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.011 U	0.011 U	0.0097 U	0.011 U	0.012 U	0.0097 U	0.01 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-123
				Sample Date:	5/18/2016	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U	0.0094 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U	0.0094 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U	0.0094 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U	0.0094 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U	0.0094 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U	0.0098 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U	0.0098 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U	0.0098 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U	0.0098 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U	0.0098 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-124	CFSB-124	CFSB-124	CFSB-125	CFSB-125	CFSB-125	CFSB-126	CFSB-126
				Sample Date:	5/19/2016	5/19/2016	5/19/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-126	CFSB-127	CFSB-127	CFSB-127	CFSB-128	CFSB-128	CFSB-128	CFSB-129
				Sample Date:	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
				Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12	CFSB-128-SO-0-0.5	CFSB-128-SO-0.5-2.0	CFSB-128-SO-10-12	CFSB-129-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0095 U	0.01 U	0.0098 U	0.0096 U	0.0098 U	0.0098 U	0.0092 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0095 U	0.01 U	0.0098 U	0.0096 U	0.0098 U	0.0098 U	0.0092 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0095 U	0.01 U	0.0098 U	0.0096 U	0.0098 U	0.0098 U	0.0092 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0095 U	0.01 U	0.0098 U	0.0096 U	0.0098 U	0.0098 U	0.0092 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0095 U	0.01 U	0.0098 U	0.0096 U	0.0098 U	0.0098 U	0.0092 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0098 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0099 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0098 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0099 U
Aroclor 1268	--	--	--	mg/kg	0.0098 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0099 U
Aroclor-1262	--	--	--	mg/kg	0.0098 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0099 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0098 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0099 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-129	CFSB-129	CFSB-130	CFSB-130	CFSB-131	CFSB-131	CFSB-131	CFSB-131
				Sample Date:	5/24/2016	5/24/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	18 - 20	22 - 23
				Sample Designation:	CFSB-129-SO-0.5-2.0	CFSB-129-SO-10-12	CFSB-130-SO-0.5-2	CFSB-130-SO-10-12	CFSB-131-SO-0.5-2	CFSB-131-SO-10-12	CFSB-131-SO-18-20	CFSB-131-SO-22-23
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0092 U	0.0092 U	0.0093 U	0.0098 U	0.0094 U	0.0096 U	0.0091 U	0.0092 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0092 U	0.0092 U	0.0093 U	0.0098 U	0.0094 U	0.0096 U	0.0091 U	0.0092 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0092 U	0.0092 U	0.0093 U	0.0098 U	0.0094 U	0.0096 U	0.0091 U	0.0092 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0092 U	0.0092 U	0.0093 U	0.0098 U	0.0094 U	0.0096 U	0.0091 U	0.0092 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0092 U	0.0092 U	0.0093 U	0.0098 U	0.0094 U	0.0096 U	0.0091 U	0.0092 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0096 U	0.0095 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.0094 U	0.0095 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0096 U	0.0095 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.0094 U	0.0095 U
Aroclor 1268	--	--	--	mg/kg	0.0096 U	0.0095 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.0094 U	0.0095 U
Aroclor-1262	--	--	--	mg/kg	0.0096 U	0.0095 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.0094 U	0.0095 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0096 U	0.0095 U	0.0097 U	0.01 U	0.0097 U	0.01 U	0.0094 U	0.0095 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-132	CFSB-132	CFSB-132	CFSB-133	CFSB-133	CFSB-133	CFSDP-001	CFSDP-002	CFSDP-007
				Sample Date:	6/3/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	08 Sep 2016	08 Sep 2016	08 Sep 2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0 - 0.5
				Sample Designation:	CFSB-132-SO-0-0.5	CFSB-132-SO-0.5-2	CFSB-132-SO-10-12	CFSB-133-SO-0-0.5	CFSB-133-SO-0.5-2	CFSB-133-SO-10-12	CFSDP-001-SO	CFSDP-002-SO	CFSDP-007-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0096 U	0.012 U	0.012 U	0.012 U	0.012 U	0.01 U	0.012 U	0.011 U	0.012 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0096 U	0.012 U	0.012 U	0.012 U	0.012 U	0.01 U	0.012 U	0.011 U	0.012 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0096 U	0.012 U	0.012 U	0.012 U	0.012 U	0.01 U	0.012 U	0.011 U	0.012 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0096 U	0.012 U	0.012 U	0.012 U	0.012 U	0.01 U	0.012 U	0.011 U	0.012 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0096 U	0.012 U	0.012 U	0.012 U	0.012 U	0.01 U	0.012 U	0.011 U	0.012 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0099 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.013 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0099 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.013 U
Aroclor 1268	--	--	--	mg/kg	0.0099 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.013 U
Aroclor-1262	--	--	--	mg/kg	0.0099 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.013 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0099 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.013 U	0.011 U	0.013 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L4. Polychlorinated Biphenyl in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011	CFSDP-012	CFSDP-012	CFSDP-013	CFSDP-017	CFSDP-021	CFSDP-022
			Sample Date:		08 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:		CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO	CFSDP-012-SO	CFSDP-DUP1-SO	CFSDP-013-SO	CFSDP-017-SO	CFSDP-021-SO	CFSDP-022-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.016 U	0.012 U	0.01 U	0.014 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.016 U	0.012 U	0.01 U	0.014 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.016 U	0.012 U	0.01 U	0.014 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.016 U	0.012 U	0.01 U	0.014 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.011 U	0.016 U	0.012 U	0.01 U	0.014 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.017 U	0.012 U	0.011 U	0.015 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.017 U	0.012 U	0.011 U	0.015 U
Aroclor 1268	--	--	--	mg/kg	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.017 U	0.012 U	0.011 U	0.015 U
Aroclor-1262	--	--	--	mg/kg	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.017 U	0.012 U	0.011 U	0.015 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.013 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.017 U	0.012 U	0.011 U	0.015 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-002	CFMW-003a	CFMW-008a	CFMW-010	CFMW-011a	CFMW-012a	CFMW-016a	CFMW-018	CFMW-019a	CFMW-022
			Sample Date:	6/13/2016	5/31/2016	6/13/2016	5/18/2016	6/25/2016	5/20/2016	6/21/2016	5/19/2016	5/25/2016	6/2/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFMW-002-SO-0-0.5	CFMW-003a-SO-0-0.5	CFMW-008a-SO-0-0.5	CFMW-010-SO-0-0.5	CFMW-011a-SO-0-0.5	CFMW-012A-SO-0-0.5	CFMW-016a-SO-0-0.5	CFMW-018-SO-0-0.5	CFMW-019a-SO-0-0.5	CFMW-022-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.00094 U	0.0011 UJ	0.00097 U	0.00099 U	0.0011 U	0.001 U	0.00098 U	0.00099 U	0.00098 U	0.001 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.001 U	0.0012 UJ	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00073 U	0.00084 UJ	0.00076 U	0.00078 U	0.00086 U	0.00079 U	0.00077 U	0.00077 U	0.00077 U	0.00079 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00086 U	0.00099 UJ	0.00089 U	0.00091 U	0.001 U	0.00092 U	0.0009 U	0.00091 U	0.0009 U	0.00092 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00065 U	0.00074 UJ	0.00067 U	0.00069 U	0.00076 U	0.0007 U	0.00068 U	0.00068 U	0.00068 U	0.0007 U
alpha-Chlordane	--	--	--	mg/kg	0.0012 U	0.0013 UJ	0.0012 U	0.0012 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00069 U	0.00079 UJ	0.00072 U	0.00073 U	0.00081 U	0.00074 U	0.00072 U	0.00073 U	0.00072 U	0.00074 U
delta-BHC	--	--	--	mg/kg	0.00078 U	0.00089 UJ	0.0008 U	0.00082 U	0.00091 U	0.00083 U	0.00081 U	0.00082 U	0.00081 U	0.00083 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.00093 U	0.0011 UJ	0.00096 U	0.00098 U	0.0011 U	0.00099 U	0.00097 U	0.00098 U	0.00097 U	0.00099 U
Endosulfan I	--	--	--	mg/kg	0.00099 U	0.0011 UJ	0.001 U	0.0011 U	0.0012 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.0011 U
Endosulfan II	--	--	--	mg/kg	0.0011 U	0.0013 UJ	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Endosulfan sulfate	--	--	--	mg/kg	0.00083 U	0.00095 UJ	0.00086 U	0.00088 U	0.00097 U	0.00089 U	0.00087 U	0.00087 U	0.00087 U	0.00089 U
Endrin	1.9	25	0.0092	mg/kg	0.0009 U	0.001 UJ	0.00094 U	0.00096 U	0.0011 U	0.00097 U	0.00095 U	0.00095 U	0.00094 U	0.00097 U
Endrin aldehyde	--	--	--	mg/kg	0.00088 U	0.001 UJ	0.00091 U	0.00094 U	0.001 U	0.00095 U	0.00093 U	0.00093 U	0.00092 U	0.00095 U
Endrin ketone	--	--	--	mg/kg	0.00099 U	0.0011 UJ	0.001 U	0.0011 U	0.0012 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.0011 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00064 U	0.00073 UJ	0.00066 U	0.00068 U	0.00075 U	0.00069 U	0.00067 U	0.00067 U	0.00067 U	0.00068 U
gamma-Chlordane	--	--	--	mg/kg	0.0015 U	0.0018 UJ	0.0016 U	0.0016 U	0.0018 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00092 U	0.001 UJ	0.00095 U	0.00097 U	0.0011 U	0.00098 U	0.00096 U	0.00096 U	0.00096 U	0.00098 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0014 U	0.0016 UJ	0.0014 U	0.0015 U	0.0016 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Methoxychlor	32	410	0.2	mg/kg	0.0015 U	0.0017 UJ	0.0016 U	0.0016 U	0.0018 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.021 U	0.024 UJ	0.021 U	0.022 U	0.024 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-023a	CFMW-025a	CFMW-026	CFMW-027	CFMW-028a	CFMW-029	CFMW-032a	CFMW-034	CFMW-035	CFMW-035
			Sample Date:	6/17/2016	7/13/2016	6/14/2016	6/30/2016	6/30/2016	5/18/2016	8/8/2016	5/31/2016	6/1/2016	6/1/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFMW-023a-SO-0-0.5	CFMW-025a-SO-0-0.5	CFMW-026-SO-0-0.5	CFMW-027-SO-0-0.5	CFMW-028a-SO-0-0.5	CFMW-029-SO-0-0.5	CFMW-032a-SO-0-0.5	CFMW-034-SO-0-0.5	CFMW-035-SO-0-0.5	CFMW-DUP11-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.001 U	0.0011 U	0.0013 U	0.0013 U	0.001 U	0.00094 U	0.001 U	0.00095 U	0.00097 U	0.00095 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.0013 U	0.0014 U	0.0014 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.001 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00081 U	0.00089 U	0.001 U	0.001 U	0.00082 U	0.00074 U	0.00079 U	0.00074 U	0.00076 U	0.00074 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00095 U	0.001 U	0.0012 U	0.0012 U	0.00096 U	0.00087 U	0.00092 U	0.00087 U	0.00089 U	0.00087 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00072 U	0.00079 U	0.00089 U	0.00089 U	0.00072 U	0.00065 U	0.0007 U	0.00066 U	0.00067 U	0.00066 U
alpha-Chlordane	--	--	--	mg/kg	0.0013 U	0.0014 U	0.0016 U	0.0016 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00077 U	0.00084 U	0.00095 U	0.00095 U	0.00077 U	0.0007 U	0.00074 U	0.0007 U	0.00072 U	0.0007 U
delta-BHC	--	--	--	mg/kg	0.00086 U	0.00094 U	0.0011 U	0.0011 U	0.00086 U	0.00078 U	0.00083 U	0.00079 U	0.00081 U	0.00078 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.001 R	0.0011 U	0.0013 U	0.0013 U	0.001 U	0.00093 U	0.00099 U	0.00094 U	0.00096 U	0.00094 U
Endosulfan I	--	--	--	mg/kg	0.0011 U	0.0012 U	0.0014 U	0.0014 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.001 U	0.001 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0014 U	0.0015 U	0.0015 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U
Endosulfan sulfate	--	--	--	mg/kg	0.00092 U	0.001 U	0.0011 U	0.0011 U	0.00092 U	0.00084 U	0.00089 U	0.00084 U	0.00086 U	0.00084 U
Endrin	1.9	25	0.0092	mg/kg	0.001 U	0.0011 U	0.0012 U	0.0012 U	0.001 U	0.00091 U	0.00097 U	0.00092 U	0.00094 U	0.00091 U
Endrin aldehyde	--	--	--	mg/kg	0.00098 U	0.0011 U	0.0012 U	0.0012 U	0.00098 U	0.00089 U	0.00095 U	0.0009 U	0.00092 U	0.00089 U
Endrin ketone	--	--	--	mg/kg	0.0011 U	0.0012 U	0.0014 U	0.0014 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.001 U	0.001 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00071 U	0.00078 U	0.00087 U	0.00088 U	0.00071 U	0.00064 U	0.00068 U	0.00065 U	0.00066 U	0.00065 U
gamma-Chlordane	--	--	--	mg/kg	0.0017 U	0.0019 U	0.0021 U	0.0021 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.001 U	0.0011 U	0.0013 U	0.0013 U	0.001 U	0.00092 U	0.00098 U	0.00093 U	0.00095 U	0.00092 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0017 U	0.0019 U	0.0019 U	0.0015 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U
Methoxychlor	32	410	0.2	mg/kg	0.0017 U	0.0018 U	0.0021 U	0.0021 U	0.0017 U	0.0015 U	0.0016 U	0.0015 U	0.0016 U	0.0015 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.023 U	0.025 U	0.028 U	0.029 U	0.023 U	0.021 U	0.022 U	0.021 U	0.022 U	0.021 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-037	CFMW-038	CFMW-040	CFMW-042	CFMW-043	CFMW-044a	CFMW-045a	CFMW-047	CFMW-049	CFMW-050
			Sample Date:	6/24/2016	6/25/2016	6/28/2016	6/16/2016	6/15/2016	7/20/2016	8/12/2016	6/21/2016	8/20/2016	6/22/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFMW-037-SO-0-0.5	CFMW-038-SO-0-0.5	CFMW-040-SO-0-0.5	CFMW-042-SO-0-0.5	CFMW-043-SO-0-0.5	CFMW-044a-SO-0-0.5	CFMW-045a-SO-0-0.5	CFMW-047-SO-0-0.5	CFMW-049-SO-0-0.5	CFMW-050-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.001 U	0.00095 U	0.00097 U	0.0014 U	0.00098 U	0.001 U	0.001 U	0.00095 U	0.00099 U	0.0012 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.001 U	0.0011 U	0.0015 U	0.0011 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0013 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.0008 U	0.00074 U	0.00076 U	0.0011 U	0.00077 U	0.00078 U	0.00079 U	0.00075 U	0.00078 U	0.0009 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00094 U	0.00087 U	0.00089 U	0.0013 U	0.0009 U	0.00092 U	0.00092 U	0.00088 U	0.00091 U	0.0011 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00071 U	0.00066 U	0.00067 U	0.00097 U	0.00068 U	0.00069 U	0.0007 U	0.00066 U	0.00069 U	0.0008 U
alpha-Chlordane	--	--	--	mg/kg	0.0013 U	0.0012 U	0.0012 U	0.0017 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0014 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00076 U	0.0007 U	0.00071 U	0.001 U	0.00072 U	0.00074 U	0.00074 U	0.0007 U	0.00073 U	0.00085 U
delta-BHC	--	--	--	mg/kg	0.00085 U	0.00079 U	0.0008 U	0.0012 U	0.00081 U	0.00083 U	0.00083 U	0.00079 U	0.00082 U	0.00095 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.001 U	0.00094 U	0.00096 U	0.0014 U	0.00097 U	0.00098 U	0.00099 U	0.00094 U	0.00098 U	0.0011 U
Endosulfan I	--	--	--	mg/kg	0.0011 U	0.001 U	0.001 U	0.0015 U	0.001 U	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0011 U	0.0012 U	0.0017 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0014 U
Endosulfan sulfate	--	--	--	mg/kg	0.00091 U	0.00084 U	0.00086 U	0.0012 U	0.00087 U	0.00088 U	0.00089 U	0.00084 U	0.00088 U	0.001 U
Endrin	1.9	25	0.0092	mg/kg	0.00099 U	0.00092 U	0.00093 U	0.0013 U	0.00095 U	0.00096 U	0.00097 U	0.00092 U	0.00096 U	0.0011 U
Endrin aldehyde	--	--	--	mg/kg	0.00097 U	0.0009 U	0.00091 U	0.0013 U	0.00093 U	0.00094 U	0.00095 U	0.0009 U	0.00093 U	0.0011 U
Endrin ketone	--	--	--	mg/kg	0.0011 U	0.001 U	0.001 U	0.0015 U	0.001 U	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.0007 U	0.00065 U	0.00066 U	0.00095 U	0.00067 U	0.00068 U	0.00068 U	0.00065 U	0.00068 U	0.00078 U
gamma-Chlordane	--	--	--	mg/kg	0.0017 U	0.0016 U	0.0016 U	0.0023 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0016 U	0.0019 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.001 U	0.00093 U	0.00094 U	0.0014 U	0.00096 U	0.00097 U	0.00098 U	0.00093 U	0.00097 U	0.0011 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0014 U	0.0014 U	0.0021 U	0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0015 U	0.0017 U
Methoxychlor	32	410	0.2	mg/kg	0.0017 U	0.0015 U	0.0016 U	0.0023 U	0.0016 U	0.0016 U	0.0016 U	0.0015 U	0.0016 U	0.0019 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.023 U	0.021 U	0.021 U	0.031 U	0.022 U	0.022 U	0.022 U	0.021 U	0.022 U	0.025 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-053a	CFMW-054	CFMW-056a	CFMW-057a	CFMW-059a	CFMW-061	CFMW-064	CFSB-014	CFSB-016	CFSB-025
			Sample Date:	8/17/2016	6/20/2016	7/15/2016	7/27/2016	7/22/2016	7/12/2016	7/11/2016	6/2/2016	6/2/2016	6/13/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	10 - 12	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFMW-053a-SO-0-0.5	CFMW-054-SO-0-0.5	CFMW-056a-SO-0-0.5	CFMW-057a-SO-0-0.5	CFMW-059a-SO-0-0.5	CFMW-061-SO-10-12	CFMW-064-SO-0-0.5	CFSB-014-SO-0-0.5	CFSB-016-SO-0-0.5	CFSB-025-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.001 U	0.00096 U	0.0011 U	0.00098 U	0.0011 U	0.00093 U	0.0011 U	0.0011 U	0.0016 U	0.0017 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.001 U	0.0013 U	0.0012 U	0.0018 U	0.0018 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.0008 U	0.00076 U	0.00085 U	0.00077 U	0.00084 U	0.00073 U	0.00089 U	0.00084 U	0.0013 U	0.0013 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00094 U	0.00089 U	0.001 U	0.0009 U	0.00099 U	0.00086 U	0.001 U	0.00099 U	0.0015 U	0.0015 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.0007 U	0.00067 U	0.00075 U	0.00068 U	0.00074 U	0.00065 U	0.00079 U	0.00075 U	0.0011 U	0.0011 U
alpha-Chlordane	--	--	--	mg/kg	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0014 U	0.0013 U	0.002 U	0.002 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00075 U	0.00071 U	0.0008 U	0.00072 U	0.00079 U	0.00069 U	0.00084 U	0.00079 U	0.0012 U	0.0012 U
delta-BHC	--	--	--	mg/kg	0.00084 U	0.0008 U	0.0009 U	0.00081 U	0.00089 U	0.00077 U	0.00094 U	0.00089 U	0.0013 U	0.0014 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.001 U	0.00095 U	0.0011 U	0.00097 U	0.0011 U	0.00092 U	0.0011 U	0.0011 U	0.0016 U	0.0016 U
Endosulfan I	--	--	--	mg/kg	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00098 U	0.0012 U	0.0011 U	0.0017 U	0.0017 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0011 U	0.0014 U	0.0013 U	0.0019 U	0.002 U
Endosulfan sulfate	--	--	--	mg/kg	0.0009 U	0.00085 U	0.00096 U	0.00087 U	0.00095 U	0.00083 U	0.001 U	0.00095 U	0.0014 U	0.0015 U
Endrin	1.9	25	0.0092	mg/kg	0.00098 U	0.00093 U	0.0011 U	0.00095 U	0.001 U	0.0009 U	0.0011 U	0.001 U	0.0015 U	0.0016 U
Endrin aldehyde	--	--	--	mg/kg	0.00096 U	0.00091 U	0.001 U	0.00092 U	0.001 U	0.00088 U	0.0011 U	0.001 U	0.0015 U	0.0016 U
Endrin ketone	--	--	--	mg/kg	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00098 U	0.0012 U	0.0011 U	0.0017 U	0.0017 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00069 U	0.00066 U	0.00074 U	0.00067 U	0.00073 U	0.00064 U	0.00078 U	0.00073 U	0.0011 U	0.0011 U
gamma-Chlordane	--	--	--	mg/kg	0.0017 U	0.0016 U	0.0018 U	0.0016 U	0.0018 U	0.0015 U	0.0019 U	0.0018 U	0.0026 U	0.0027 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00099 U	0.00094 U	0.0011 U	0.00096 U	0.001 U	0.00091 U	0.0011 U	0.0011 U	0.0016 U	0.0016 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0014 U	0.0016 U	0.0015 U	0.0016 U	0.0014 U	0.0017 U	0.0016 U	0.0024 U	0.0025 U
Methoxychlor	32	410	0.2	mg/kg	0.0016 U	0.0016 U	0.0018 U	0.0016 U	0.0017 U	0.0015 U	0.0018 U	0.0017 U	0.0026 U	0.0027 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.023 U	0.021 U	0.024 U	0.022 U	0.024 U	0.021 U	0.025 U	0.024 U	0.035 U	0.037 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-026	CFSB-028	CFSB-030	CFSB-042	CFSB-044	CFSB-101	CFSB-104	CFSB-110	CFSB-113	CFSB-116	CFSB-118
			Sample Date:	6/13/2016	7/18/2016	6/13/2016	5/20/2016	5/20/2016	7/21/2016	7/13/2016	7/14/2016	8/31/2016	7/22/2016	7/21/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFSB-026-SO-0-0.5	CFSB-028-SO-0-0.5	CFSB-030-SO-0-0.5	CFSB-042-SO-0-0.5	CFSB-044-SO-0-0.5	CFSB-101-SO-0-0.5	CFSB-104-SO-0-0.5	CFSB-110-SO-0-0.5	CFSB-113-SO-0-0.5	CFSB-116-SO-0-0.5	CFSB-118-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.0023 U	0.001 U	0.0011 U	0.001 U	0.00096 U	0.0012 U	0.0014 U	0.002 U	0.0011 U	0.0014 U	0.0011 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0025 U	0.0011 U	0.0013 U	0.0011 U	0.0011 U	0.0013 U	0.0016 U	0.0022 U	0.0012 U	0.0016 U	0.0012 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.0018 U	0.00078 U	0.00089 U	0.00079 U	0.00076 U	0.00094 U	0.0011 U	0.0016 U	0.00086 U	0.0011 U	0.00087 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0021 U	0.00092 U	0.001 U	0.00092 U	0.00089 U	0.0011 U	0.0013 U	0.0018 U	0.001 U	0.0013 U	0.001 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.0016 U	0.00069 U	0.00079 U	0.0007 U	0.00067 U	0.00083 U	0.001 U	0.0014 U	0.00076 U	0.00099 U	0.00077 U
alpha-Chlordane	--	--	--	mg/kg	0.0028 U	0.0012 U	0.0014 U	0.0012 U	0.0012 U	0.0015 U	0.0018 U	0.0025 U	0.0014 U	0.0018 U	0.0014 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.0017 U	0.00074 U	0.00084 U	0.00074 U	0.00071 U	0.00089 U	0.0011 U	0.0015 U	0.00081 U	0.0011 U	0.00082 U
delta-BHC	--	--	--	mg/kg	0.0019 U	0.00083 U	0.00094 U	0.00083 U	0.0008 U	0.001 U	0.0012 U	0.0017 U	0.00091 U	0.0012 U	0.00092 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.0022 U	0.00099 U	0.0011 U	0.00099 U	0.00095 U	0.0012 U	0.0014 U	0.002 U	0.0011 U	0.0014 U	0.0011 U
Endosulfan I	--	--	--	mg/kg	0.0024 U	0.0011 U	0.0012 U	0.0011 U	0.001 U	0.0013 U	0.0015 U	0.0021 U	0.0012 U	0.0015 U	0.0012 U
Endosulfan II	--	--	--	mg/kg	0.0027 U	0.0012 U	0.0014 U	0.0012 U	0.0012 U	0.0014 U	0.0017 U	0.0024 U	0.0013 U	0.0017 U	0.0013 U
Endosulfan sulfate	--	--	--	mg/kg	0.002 U	0.00088 U	0.001 U	0.00089 U	0.00086 U	0.0011 U	0.0013 U	0.0018 U	0.00098 U	0.0013 U	0.00098 U
Endrin	1.9	25	0.0092	mg/kg	0.0022 U	0.00096 U	0.0011 U	0.00097 U	0.00093 U	0.0012 U	0.0014 U	0.0019 U	0.0011 U	0.0014 U	0.0011 U
Endrin aldehyde	--	--	--	mg/kg	0.0021 U	0.00094 U	0.0011 U	0.00095 U	0.00091 U	0.0011 U	0.0014 U	0.0019 U	0.001 U	0.0013 U	0.001 U
Endrin ketone	--	--	--	mg/kg	0.0024 U	0.0011 U	0.0012 U	0.0011 U	0.001 U	0.0013 U	0.0015 U	0.0021 U	0.0012 U	0.0015 U	0.0012 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.0015 U	0.00068 U	0.00078 U	0.00068 U	0.00066 U	0.00082 U	0.00099 U	0.0014 U	0.00075 U	0.00097 U	0.00075 U
gamma-Chlordane	--	--	--	mg/kg	0.0037 U	0.0016 U	0.0019 U	0.0017 U	0.0016 U	0.002 U	0.0024 U	0.0033 U	0.0018 U	0.0023 U	0.0018 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.0022 U	0.00098 U	0.0011 U	0.00098 U	0.00094 U	0.0012 U	0.0014 U	0.002 U	0.0011 U	0.0014 U	0.0011 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0034 U	0.0015 U	0.0017 U	0.0015 U	0.0014 U	0.0018 U	0.0022 U	0.003 U	0.0016 U	0.0021 U	0.0016 U
Methoxychlor	32	410	0.2	mg/kg	0.0036 U	0.0016 U	0.0018 U	0.0016 U	0.0016 U	0.0019 U	0.0023 U	0.0032 U	0.0018 U	0.0023 U	0.0018 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.05 U	0.022 U	0.025 U	0.022 U	0.021 U	0.027 U	0.032 U	0.044 U	0.024 U	0.032 U	0.025 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-120	CFSB-121	CFSB-121	CFSB-122	CFSB-123	CFSB-124	CFSB-125	CFSB-126	CFSB-127	CFSDP-001	CFSDP-002
			Sample Date:	5/18/2016	5/18/2016	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/18/2016	5/18/2016	5/18/2016	08 Sep 2016	08 Sep 2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFSB-120-SO-0-0.5	CFSB-121-SO-0-0.5	CFSB-DUP1-SO	CFSB-122-SO-0-0.5	CFSB-123-SO-0-0.5	CFSB-124-SO-0-0.5	CFSB-125-SO-0-0.5	CFSB-126-SO-0-0.5	CFSB-127-SO-0-0.5	CFSDP-001-SO	CFSDP-002-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.001 U	0.001 U	0.001 U	0.0014 U	0.0011 U	0.0012 U	0.00099 U	0.0011 U	0.001 U	0.0012 U	0.0011 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0015 U	0.0013 U	0.0013 U	0.0011 U	0.0013 U	0.0011 U	0.0013 U	0.0012 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.0008 U	0.00079 U	0.00079 U	0.0011 U	0.00089 U	0.00093 U	0.00077 U	0.0009 U	0.00079 U	0.00094 U	0.00083 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00094 U	0.00092 U	0.00093 U	0.0013 U	0.001 U	0.0011 U	0.00091 U	0.0011 U	0.00093 U	0.0011 U	0.00098 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00071 U	0.00069 U	0.0007 U	0.00097 U	0.00079 U	0.00083 U	0.00068 U	0.00079 U	0.0007 U	0.00083 U	0.00074 U
alpha-Chlordane	--	--	--	mg/kg	0.0013 U	0.0012 U	0.0013 U	0.0017 U	0.0014 U	0.0015 U	0.0012 U	0.0014 U	0.0012 U	0.0015 U	0.0013 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00075 U	0.00074 U	0.00075 U	0.001 U	0.00084 U	0.00088 U	0.00073 U	0.00084 U	0.00074 U	0.00089 U	0.00078 U
delta-BHC	--	--	--	mg/kg	0.00085 U	0.00083 U	0.00084 U	0.0012 U	0.00094 U	0.00099 U	0.00082 U	0.00095 U	0.00083 U	0.001 U	0.00088 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.001 U	0.00099 U	0.001 U	0.0014 U	0.0011 U	0.0012 U	0.00097 U	0.0011 U	0.00099 U	0.0012 U	0.0011 U
Endosulfan I	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0015 U	0.0012 U	0.0013 U	0.001 U	0.0012 U	0.0011 U	0.0013 U	0.0011 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0012 U	0.0012 U	0.0017 U	0.0014 U	0.0014 U	0.0012 U	0.0014 U	0.0012 U	0.0014 U	0.0013 U
Endosulfan sulfate	--	--	--	mg/kg	0.0009 U	0.00089 U	0.0009 U	0.0012 U	0.001 U	0.0011 U	0.00087 U	0.001 U	0.00089 U	0.0011 U	0.00094 U
Endrin	1.9	25	0.0092	mg/kg	0.00099 U	0.00097 U	0.00098 U	0.0014 U	0.0011 U	0.0011 U	0.00095 U	0.0011 U	0.00097 U	0.0012 U	0.001 U
Endrin aldehyde	--	--	--	mg/kg	0.00096 U	0.00095 U	0.00095 U	0.0013 U	0.0011 U	0.0011 U	0.00093 U	0.0011 U	0.00095 U	0.0011 U	0.001 U
Endrin ketone	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0015 U	0.0012 U	0.0013 U	0.001 U	0.0012 U	0.0011 U	0.0013 U	0.0011 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.0007 U	0.00068 U	0.00069 U	0.00095 U	0.00077 U	0.00081 U	0.00067 U	0.00078 U	0.00069 U	0.00082 U	0.00072 U
gamma-Chlordane	--	--	--	mg/kg	0.0017 U	0.0017 U	0.0017 U	0.0023 U	0.0019 U	0.002 U	0.0016 U	0.0019 U	0.0017 U	0.002 U	0.0018 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.001 U	0.00098 U	0.00099 U	0.0014 U	0.0011 U	0.0012 U	0.00096 U	0.0011 U	0.00098 U	0.0012 U	0.001 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0015 U	0.0015 U	0.0021 U	0.0017 U	0.0018 U	0.0015 U	0.0017 U	0.0015 U	0.0018 U	0.0016 U
Methoxychlor	32	410	0.2	mg/kg	0.0016 U	0.0016 U	0.0016 U	0.0023 U	0.0018 U	0.0019 U	0.0016 U	0.0018 U	0.0016 U	0.0019 U	0.0017 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.023 U	0.022 U	0.022 U	0.031 U	0.025 U	0.026 U	0.022 U	0.025 U	0.022 U	0.027 U	0.024 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L5. Organochlorine Pesticides in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSDP-007	CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011	CFSDP-012	CFSDP-012	CFSDP-013	CFSDP-017	CFSDP-021	CFSDP-022
			Sample Date:	08 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFSDP-007-SO	CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO	CFSDP-012-SO	CFSDP-DUP1-SO	CFSDP-013-SO	CFSDP-017-SO	CFSDP-021-SO	CFSDP-022-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.0012 U	0.0013 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0016 U	0.0012 U	0.001 U	0.0014 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0013 U	0.0014 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0013 U	0.0018 U	0.0013 U	0.0011 U	0.0015 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00095 U	0.00098 U	0.00083 U	0.00096 U	0.00084 U	0.0009 U	0.00089 U	0.0012 U	0.00093 U	0.00079 U	0.0011 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0011 U	0.0012 U	0.00097 U	0.0011 U	0.00099 U	0.0011 U	0.001 U	0.0015 U	0.0011 U	0.00093 U	0.0013 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00084 U	0.00087 U	0.00073 U	0.00084 U	0.00074 U	0.00079 U	0.00079 U	0.0011 U	0.00082 U	0.0007 U	0.00097 U
alpha-Chlordane	--	--	--	mg/kg	0.0015 U	0.0016 U	0.0013 U	0.0015 U	0.0013 U	0.0014 U	0.0014 U	0.002 U	0.0015 U	0.0013 U	0.0017 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00089 U	0.00093 U	0.00078 U	0.0009 U	0.00079 U	0.00085 U	0.00084 U	0.0012 U	0.00088 U	0.00075 U	0.001 U
delta-BHC	--	--	--	mg/kg	0.001 U	0.001 U	0.00087 U	0.001 U	0.00089 U	0.00095 U	0.00094 U	0.0013 U	0.00099 U	0.00084 U	0.0012 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.0012 U	0.0012 U	0.001 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0016 U	0.0012 U	0.001 U	0.0014 U
Endosulfan I	--	--	--	mg/kg	0.0013 U	0.0013 U	0.0011 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U	0.0017 U	0.0013 U	0.0011 U	0.0015 U
Endosulfan II	--	--	--	mg/kg	0.0014 U	0.0015 U	0.0013 U	0.0015 U	0.0013 U	0.0014 U	0.0014 U	0.0019 U	0.0014 U	0.0012 U	0.0017 U
Endosulfan sulfate	--	--	--	mg/kg	0.0011 U	0.0011 U	0.00093 U	0.0011 U	0.00095 U	0.001 U	0.001 U	0.0014 U	0.0011 U	0.0009 U	0.0012 U
Endrin	1.9	25	0.0092	mg/kg	0.0012 U	0.0012 U	0.001 U	0.0012 U	0.001 U	0.0011 U	0.0011 U	0.0015 U	0.0011 U	0.00098 U	0.0013 U
Endrin aldehyde	--	--	--	mg/kg	0.0011 U	0.0012 U	0.00099 U	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0015 U	0.0011 U	0.00095 U	0.0013 U
Endrin ketone	--	--	--	mg/kg	0.0013 U	0.0013 U	0.0011 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U	0.0017 U	0.0013 U	0.0011 U	0.0015 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00082 U	0.00085 U	0.00072 U	0.00083 U	0.00073 U	0.00078 U	0.00077 U	0.0011 U	0.00081 U	0.00069 U	0.00095 U
gamma-Chlordane	--	--	--	mg/kg	0.002 U	0.0021 U	0.0017 U	0.002 U	0.0018 U	0.0019 U	0.0019 U	0.0026 U	0.002 U	0.0017 U	0.0023 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.0012 U	0.0012 U	0.001 U	0.0012 U	0.001 U	0.0011 U	0.0011 U	0.0016 U	0.0012 U	0.00099 U	0.0014 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0018 U	0.0019 U	0.0016 U	0.0018 U	0.0016 U	0.0017 U	0.0017 U	0.0024 U	0.0018 U	0.0015 U	0.0021 U
Methoxychlor	32	410	0.2	mg/kg	0.0019 U	0.002 U	0.0017 U	0.002 U	0.0017 U	0.0018 U	0.0018 U	0.0026 U	0.0019 U	0.0016 U	0.0022 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.027 U	0.028 U	0.023 U	0.027 U	0.024 U	0.025 U	0.025 U	0.035 U	0.026 U	0.022 U	0.031 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-002	CFMW-002	CFMW-002	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-003a	CFMW-008a	CFMW-008a
			Sample Date:		6/13/2016	6/13/2016	6/13/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	6/2/2016	6/13/2016	6/13/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	10 - 12	23 - 28	0 - 0.5	0.5 - 2
			Sample Designation:		CFMW-002-SO-0-0.5	CFMW-002-SO-0.5-2	CFMW-002-SO-10-12	CFMW-003a-SO-0-0.5	CFMW-003a-SO-0.5-2	CFMW-003a-SO-10-12	CFMW-DUP9-SO	CFMW-003a-SO-23-28	CFMW-008a-SO-0-0.5	CFMW-008a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	56.7 J-	166 J+	10.2 J-	4.17 J	37.8 J-	2.76 J	3.31 J-	0.34 J	84.9 J-	180 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	30400	16900	14200	19500	17000	56500	57200

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-008a	CFMW-008a	CFMW-008a	CFMW-010	CFMW-010	CFMW-010	CFMW-011a	CFMW-011a	CFMW-011a	CFMW-011a
				Sample Date:	6/13/2016	6/13/2016	6/13/2016	5/18/2016	5/18/2016	5/18/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016
				Sample Depth (ft-bls):	10 - 12	10 - 12	88 - 93	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12
				Sample Designation:	CFMW-008a-SO-10-12	CFMW-DUP14-SO	CFMW-008a-SO-88-93	CFMW-010-SO-0-0.5	CFMW-010-SO-0.5-2.0	CFMW-010-SO-10-12	CFMW-Dup18-SO	CFMW-011a-SO-0-0.5	CFMW-011a-SO-0.5-2	CFMW-011a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	3.98 J-	3.25 J-	0.62 J-	114 J-	101 J-	11.6 J-	10.1 J+	27.6 J+	12 J+	5.08 J+
Total Organic Carbon (1)	--	--	--	mg/kg	17200	21200	213	NA	NA	NA	1450	3920	1760	16900

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-011a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-012a	CFMW-016a	CFMW-016a	CFMW-016a
			Sample Date:	6/29/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	6/21/2016	6/21/2016	6/21/2016
			Sample Depth (ft-bls):	31 - 36	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	68 - 73	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:	CFMW-011a-SO-31-36	CFMW-012A-SO-0-0.5	CFMW-012A-SO-0.5-2	CFMW-012A-SO-10-12	CFMW-DUP3-SO	CFMW-012A-SO-68-73	CFMW-016a-SO-0-0.5	CFMW-016a-SO-0.5-2	CFMW-016a-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Fluoride	**310**	4700	12	mg/kg	2.08 J+	91.9 J-	59.3 J-	13.7 J-	80.8 J-	8.6 J-	59.4 J	25.4 J	6.29 J
Total Organic Carbon (1)	--	--	--	mg/kg	27400	6250	2850	21700	3740	18600	29900	7830	19100

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-016a	CFMW-018	CFMW-018	CFMW-018	CFMW-018	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-019a	CFMW-022
			Sample Date:	6/21/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	6/2/2016
			Sample Depth (ft-bls):	79 - 84	0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	0 - 0.5
			Sample Designation:	CFMW-016a-SO-79-84	CFMW-018-SO-0-0.5	CFMW-018-SO-0.5-2.0	CFMW-018-SO-10-12	CFMW-DUP2-SO	CFMW-019a-SO-0-0.5	CFMW-019a-SO-0.5-2	CFMW-019a-SO-10-12	CFMW-DUP5-SO	CFMW-022-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	0.47 J	9.33 J-	7.71 J-	4.07 J-	4.03 J-	37 J-	62.2 J-	1.3 J-	44.2 J-	17.5 J
Total Organic Carbon (1)	--	--	--	mg/kg	9570	NA	NA	NA	NA	11800	2790	16600	1990	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-022	CFMW-022	CFMW-022	CFMW-023a	CFMW-023a	CFMW-023a	CFMW-023a	CFMW-025a	CFMW-025a
				Sample Date:	6/2/2016	6/2/2016	6/2/2016	6/17/2016	6/17/2016	6/17/2016	6/18/2016	7/13/2016	7/13/2016
				Sample Depth (ft-bls):	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	123 - 128	0 - 0.5	0.5 - 2
				Sample Designation:	CFMW-022-SO-0.5-2	CFMW-DUP12-SO	CFMW-022-SO-10-12	CFMW-023a-SO-0-0.5	CFMW-023a-SO-0.5-2	CFMW-023a-SO-10-12	CFMW-023a-SO-123-128	CFMW-025a-SO-0-0.5	CFMW-025a-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	9.45 J	10.1 J	63.3 J	109 J-	58.5	3.69	0.28 J-	16.7 J	7.99 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	20800	2280	17100	19400	NA	NA

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-025a	CFMW-025a	CFMW-026	CFMW-026	CFMW-026	CFMW-026	CFMW-027	CFMW-027	CFMW-027	CFMW-028a
				Sample Date:	7/13/2016	7/13/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016
				Sample Depth (ft-bls):	10 - 12	35 - 40	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-025a-SO-10-12	CFMW-025a-SO-35-40	CFMW-026-SO-0-0.5	CFMW-026-SO-0.5-2	CFMW-DUP15-SO	CFMW-026-SO-10-12	CFMW-027-SO-0-0.5	CFMW-027-SO-0.5-2	CFMW-027-SO-10-12	CFMW-028a-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	2.06 J	1.55	4.25 J	4.09 J	84.1 J	51.7 J	149 J+	58.8 J+	44.7 J+	6.47 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	11400	NA	NA	NA	NA	NA	NA	NA	35300

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-028a	CFMW-029	CFMW-029	CFMW-029	CFMW-032a
				Sample Date:	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	5/18/2016	5/18/2016	5/18/2016	8/8/2016
				Sample Depth (ft-bls):	0.5 - 2	4.5 - 6	10 - 12	48 - 53	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFMW-028a-SO-0.5-2	CFMW-028a-SO-4.5-6	CFMW-028a-SO-10-12	CFMW-028a-SO-48-53	CFMW-DUP19-SO	CFMW-029-SO-0-0.5	CFMW-029-SO-0.5-2.0	CFMW-029-SO-10-12	CFMW-032a-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	20.1 J+	293 J+	13.8 J+	44 J+	14.9 J+	105 J-	50.3 J-	9.6 J-	78.1 J
Total Organic Carbon (1)	--	--	--	mg/kg	8870	316000	10200	24400	11100	NA	NA	NA	45900

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-032a	CFMW-032a	CFMW-032a	CFMW-032a	CFMW-033	CFMW-033	CFMW-033	CFMW-034	CFMW-034	CFMW-034
			Sample Date:		8/8/2016	8/8/2016	8/8/2016	8/8/2016	7/1/2016	7/1/2016	7/1/2016	5/31/2016	5/31/2016	5/31/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	43 - 48	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2
			Sample Designation:		CFMW-032a-SO-0.5-2	CFMW-032a-SO-10-12	CFMW-032a-SO-43-48	CFMW-Dup21-SO	CFMW-033-SO-0-0.5	CFMW-033-SO-0.5-2	CFMW-033-SO-10-12	CFMW-034-SO-0-0.5	CFMW-034-SO-0.5-2	CFMW-DUP10-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	61.6 J	1.57 J	16.8 J	1.59 J	8.12 J+	36.8 J+	11.3 J+	42.8 J	42.4 J	21.6 J-
Total Organic Carbon (1)	--	--	--	mg/kg	15200	866	13300	976	NA	NA	NA	NA	NA	NA

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-034	CFMW-035	CFMW-035	CFMW-035	CFMW-035	CFMW-037	CFMW-037	CFMW-037	CFMW-038	CFMW-038
			Sample Date:		5/31/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/24/2016	6/24/2016	6/24/2016	6/25/2016	6/25/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFMW-034-SO-10-12	CFMW-035-SO-0-0.5	CFMW-DUP11-SO	CFMW-035-SO-0.5-2	CFMW-035-SO-10-12	CFMW-037-SO-0-0.5	CFMW-037-SO-0.5-2	CFMW-037-SO-10-12	CFMW-038-SO-0-0.5	CFMW-038-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	7.39 J-	98.3 J	123 J	11.1 J	8.7 J	192 J	39.2 J+	12.3 J+	22.3 J+	25.8 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFMW-038	CFMW-040	CFMW-040	CFMW-040	CFMW-042	CFMW-042	CFMW-042	CFMW-042	CFMW-043	CFMW-043
			Sample Date:	6/25/2016	6/28/2016	6/28/2016	6/28/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016	6/15/2016	6/15/2016
			Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFMW-038-SO-10-12	CFMW-040-SO-0-0.5	CFMW-040-SO-0.5-2	CFMW-040-SO-10-12	CFMW-042-SO-0-0.5	CFMW-042-SO-0.5-2	CFMW-DUP16-SO	CFMW-042-SO-10-12	CFMW-043-SO-0-0.5	CFMW-043-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	21.5 J+	27.6 J+	22.1 J+	14 J+	47.5 J-	22.9 J	41.5 J	5.29 J	84.9 J-	86.2 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-043	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-044a	CFMW-045a	CFMW-045a	CFMW-045a	CFMW-045a
			Sample Date:		6/15/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	8/12/2016	8/12/2016	8/12/2016	8/12/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	49 - 54	0 - 0.5	0.5 - 2	10 - 12	86 - 91
			Sample Designation:		CFMW-043-SO-10-12	CFMW-044a-SO-0-0.5	CFMW-044a-SO-0.5-2	CFMW-044a-SO-10-12	CFMW-044a-SO-49-54	CFMW-045a-SO-0-0.5	CFMW-045a-SO-0.5-2	CFMW-045a-SO-10-12	CFMW-045a-SO-86-91
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	4.91 J-	59.8 J+	34 J+	4.02 J+	4.4 J+	74.8 J	65.3 J	16.7 J	4.53 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	33000	1990	13100	14200	21500	20500	20200	11500

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-047	CFMW-047	CFMW-047	CFMW-049	CFMW-049a	CFMW-049a	CFMW-049a	CFMW-050	CFMW-050	CFMW-050
				Sample Date:	6/21/2016	6/21/2016	6/21/2016	8/20/2016	8/20/2016	8/20/2016	8/22/2016	6/22/2016	6/22/2016	6/22/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	112 - 117	0 - 0.5	0.5 - 2	0.5 - 2
				Sample Designation:	CFMW-047-SO-0-0.5	CFMW-047-SO-0.5-2	CFMW-047-SO-10-12	CFMW-049-SO-0-0.5	CFMW-049a-SO-0.5-2	CFMW-049a-SO-10-12	CFMW-049a-SO-112-117	CFMW-050-SO-0-0.5	CFMW-050-SO-0.5-2	CFMW-DUP17-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	22.2 J	36.2 J	3.73 J	11.4 J+	10.9 J+	2.91 J+	1.22 J+	21.2 J+	26 J+	33 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	22600	21200	11700	18900	NA	NA	NA

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-050	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-053a	CFMW-054	CFMW-054	CFMW-054	CFMW-056a
			Sample Date:		6/22/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	6/20/2016	6/20/2016	6/20/2016	7/15/2016
			Sample Depth (ft-bls):		10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	59 - 64	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFMW-050-SO-10-12	CFMW-DUP22-SO	CFMW-053a-SO-0-0.5	CFMW-053a-SO-0.5-2	CFMW-053a-SO-10-12	CFMW-053a-SO-59-64	CFMW-054-SO-0-0.5	CFMW-054-SO-0.5-2	CFMW-054-SO-10-12	CFMW-DUP20-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	2.7 J+	3.85 J	8.82	8.47 J	3.87	3.83	231 J	**355 J**	14 J	10.7 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	13500	47000	14200	23200	16500	NA	NA	NA	44400 J

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-056a	CFMW-056a	CFMW-056a	CFMW-056a	CFMW-057a	CFMW-057a	CFMW-057a	CFMW-057a	CFMW-059a
			Sample Date:		7/15/2016	7/15/2016	7/15/2016	7/15/2016	7/27/2016	7/27/2016	7/27/2016	7/27/2016	7/22/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	37 - 42	0 - 0.5	0.5 - 2	10 - 12	30 - 35	0 - 0.5
			Sample Designation:		CFMW-056a-SO-0-0.5	CFMW-056a-SO-0.5-2	CFMW-056a-SO-10-12	CFMW-056a-SO-37-42	CFMW-057a-SO-0-0.5	CFMW-057a-SO-0.5-2	CFMW-057a-SO-10-12	CFMW-057a-SO-30-35	CFMW-059a-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	3.15 J	3.64 J+	2.27 J+	1.98 J+	15.4	1.41	1.34	0.92 J	14.2
Total Organic Carbon (1)	--	--	--	mg/kg	53600 J	6100 J	4020 J	44700 J	13300	1810	1280	16600	23200

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-059a	CFMW-059a	CFMW-059a	CFMW-061	CFMW-061	CFMW-061	CFMW-064	CFMW-064	CFMW-064	CFSB-001
			Sample Date:		7/22/2016	7/22/2016	7/23/2016	7/12/2016	7/12/2016	7/12/2016	7/11/2016	7/11/2016	7/11/2016	5/25/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	79 - 84	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFMW-059a-SO-0.5-2	CFMW-059a-SO-10-12	CFMW-059a-SO-79-84	CFMW-061-SO-0-0.5	CFMW-061-SO-0.5-2	CFMW-061-SO-10-12	CFMW-064-SO-0-0.5	CFMW-064-SO-0.5-2	CFMW-064-SO-10-12	CFSB-001-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	2.87	3.17	1.46 J	3.06 J	4.88 J	5.33 J	15 J	15.2 J	8.05 J	56.5 J
Total Organic Carbon (1)	--	--	--	mg/kg	5840	13500	15000	NA	NA	NA	NA	NA	NA	NA

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-001	CFSB-001	CFSB-002	CFSB-002	CFSB-002	CFSB-003	CFSB-003	CFSB-003	CFSB-004	CFSB-004
			Sample Date:	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-001-SO-0.5-2	CFSB-001-SO-10-12	CFSB-002-SO-0-0.5	CFSB-002-SO-0.5-2	CFSB-002-SO-10-12	CFSB-003-SO-0-0.5	CFSB-003-SO-0.5-2	CFSB-003-SO-10-12	CFSB-004-SO-0-0.5	CFSB-004-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	53.7 J	11.6 J	22.4 J	28 J	4.27 J	26.9 J	16.3 J	0.35 J	34.1 J	39 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-004	CFSB-005	CFSB-005	CFSB-005	CFSB-006	CFSB-006	CFSB-006	CFSB-007	CFSB-007	CFSB-007
			Sample Date:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/23/2016	5/23/2016	5/23/2016	5/25/2016	5/25/2016	5/25/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-004-SO-10-12	CFSB-005-SO-0-0.5	CFSB-005-SO-0.5-2	CFSB-005-SO-10-12	CFSB-006-SO-0-0.5	CFSB-006-SO-0.5-2	CFSB-006-SO-10-12	CFSB-007-SO-0-0.5	CFSB-007-SO-0.5-2	CFSB-007-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	10.3 J	11.6 J	20.4 J	4.23 J	14.6 J	5.6 J+	12.5 J	11.8 J	25 J	1.52 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-008	CFSB-008	CFSB-008	CFSB-008	CFSB-009	CFSB-009	CFSB-009	CFSB-009	CFSB-010	CFSB-010	CFSB-011
			Sample Date:	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/24/2016	5/21/2016	5/21/2016	5/19/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFSB-008-SO-0-0.5	CFSB-008-SO-0.5-2	CFSB-DUP4-SO	CFSB-008-SO-10-12	CFSB-009-SO-0-0.5	CFSB-009-SO-0.5-2	CFSB-009-SO-10-12	CFSB-DUP6-SO	CFSB-010-SO-0.5-2	CFSB-010-SO-10-12	CFSB-011-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	30.6 J	16.2 J	45.4 J	8.58 J+	37.6 J	17.9 J	4.63 J	37.9 J+	37.9 J-	16.1 J-	8.33 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-011	CFSB-011	CFSB-012	CFSB-012	CFSB-013	CFSB-013	CFSB-013	CFSB-014	CFSB-014	CFSB-014
			Sample Date:		5/19/2016	5/19/2016	5/28/2016	5/28/2016	5/19/2016	5/19/2016	5/19/2016	6/2/2016	6/2/2016	6/2/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-011-SO-0.5-2.0	CFSB-011-SO-10-12	CFSB-012-SO-0.5-2	CFSB-012-SO-10-12	CFSB-013-SO-0-0.5	CFSB-013-SO-0.5-2.0	CFSB-013-SO-10-12	CFSB-014-SO-0-0.5	CFSB-014-SO-0.5-2	CFSB-014-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	11.2 J-	7.87 J-	42.4 J	7.44 J	15.8 J-	8 J-	1.57 J-	33.6 J	7.98 J	0.87 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-016	CFSB-016	CFSB-016	CFSB-019	CFSB-019	CFSB-019	CFSB-019	CFSB-021	CFSB-021	CFSB-021	CFSB-022
				Sample Date:	6/2/2016	6/2/2016	6/2/2016	6/4/2016	6/4/2016	6/4/2016	6/13/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
				Sample Designation:	CFSB-016-SO-0-0.5	CFSB-016-SO-0.5-2	CFSB-016-SO-10-12	CFSB-019-SO-0-0.5	CFSB-019-SO-0.5-2	CFSB-DUP13-SO	CFSB-019-SO-10-12	CFSB-021-SO-0-0.5	CFSB-021-SO-0.5-2	CFSB-021-SO-10-12	CFSB-022-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	241 J	54.3 J	3.9 J	50 J	48.2 J	50.2 J	20.9 J-	89.9 J	81.1 J	16.8 J	28.9 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-022	CFSB-022	CFSB-025	CFSB-025	CFSB-025	CFSB-026	CFSB-026	CFSB-026	CFSB-027	CFSB-027
			Sample Date:		5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-022-SO-0.5-2	CFSB-022-SO-10-12	CFSB-025-SO-0-0.5	CFSB-025-SO-0.5-2	CFSB-025-SO-10-12	CFSB-026-SO-0-0.5	CFSB-026-SO-0.5-2	CFSB-026-SO-10-12	CFSB-027-SO-0-0.5	CFSB-027-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	24.7 J	25.9 J	138 J-	154 J-	34.4 J-	167 J-	258 J+	26.1 J-	52.8 J-	81.5 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-027	CFSB-028	CFSB-028	CFSB-028	CFSB-029	CFSB-029	CFSB-029	CFSB-030	CFSB-030	CFSB-030
			Sample Date:		6/13/2016	7/18/2016	7/18/2016	7/18/2016	5/23/2016	5/23/2016	5/23/2016	6/13/2016	6/13/2016	6/13/2016
			Sample Depth (ft-bls):		10 - 12	0.5 - 2	0 - 0.5	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-027-SO-10-12	CFSB-028-SO-0.5-2	CFSB-028-SO-0-0.5	CFSB-028-SO-10-12	CFSB-029-SO-0-0.5	CFSB-029-SO-0.5-2	CFSB-029-SO-10-12	CFSB-030-SO-0-0.5	CFSB-030-SO-0.5-2	CFSB-030-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	49.1 J-	23.8 J+	94.8 J+	19 J+	62 J	21.7 J	57.1 J	221 J+	84 J-	10.3 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-033	CFSB-033	CFSB-033	CFSB-034	CFSB-034	CFSB-034	CFSB-035	CFSB-035	CFSB-035	CFSB-036
			Sample Date:	5/23/2016	5/23/2016	5/23/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFSB-033-SO-0-0.5	CFSB-033-SO-0.5-2	CFSB-033-SO-10-12	CFSB-034-SO-0-0.5	CFSB-034-SO-0.5-2	CFSB-034-SO-10-12	CFSB-035-SO-0-0.5	CFSB-035-SO-0.5-2	CFSB-035-SO-10-12	CFSB-036-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	95.8 J	75.3 J	12.4 J	210 J-	20.4 J	32.9 J	180 J	116 J	35.2 J	86.8 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-036	CFSB-036	CFSB-037	CFSB-037	CFSB-037	CFSB-038	CFSB-038	CFSB-038	CFSB-040	CFSB-040
			Sample Date:	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/31/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-036-SO-0.5-2	CFSB-036-SO-10-12	CFSB-037-SO-0-0.5	CFSB-037-SO-0.5-2	CFSB-037-SO-10-12	CFSB-038-SO-0-0.5	CFSB-038-SO-0.5-2	CFSB-038-SO-10-12	CFSB-040-SO-0-0.5	CFSB-040-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	104 J-	28.3 J	19.4 J	15.5 J	5.64 J	87.3	54.4 J-	8.5	203 J-	66.8 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-040	CFSB-042	CFSB-042	CFSB-042	CFSB-044	CFSB-044	CFSB-044	CFSB-045	CFSB-045	CFSB-045
			Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/21/2016	5/21/2016	5/21/2016
			Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:	CFSB-040-SO-10-12	CFSB-042-SO-0-0.5	CFSB-042-SO-0.5-2	CFSB-042-SO-10-12	CFSB-044-SO-0-0.5	CFSB-044-SO-0.5-2.0	CFSB-044-SO-10-12	CFSB-045-SO-0-0.5	CFSB-045-SO-0.5-2	CFSB-045-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	37.1 J-	50.7 J-	33.1 J-	12.8 J-	**330 J-**	310 J-	9.64 J-	199	140	164
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-046	CFSB-046	CFSB-046	CFSB-048	CFSB-048	CFSB-048	CFSB-049	CFSB-049	CFSB-050	CFSB-050
			Sample Date:	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/20/2016	5/28/2016	5/28/2016	5/21/2016	5/21/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-046-SO-0-0.5	CFSB-046-SO-0.5-2.0	CFSB-046-SO-10-12	CFSB-048-SO-0-0.5	CFSB-048-SO-0.5-2.0	CFSB-048-SO-10-12	CFSB-049-SO-0.5-2	CFSB-049-SO-10-12	CFSB-050-SO-0-0.5	CFSB-050-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	31.7 J-	13.7 J-	10.7 J-	109 J-	57.7 J-	18.6 J-	23.3 J	4.48 J	126	165
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-050	CFSB-051	CFSB-051	CFSB-051	CFSB-052	CFSB-052	CFSB-053	CFSB-053	CFSB-054	CFSB-054
			Sample Date:		5/21/2016	5/21/2016	5/21/2016	5/21/2016	5/20/2016	5/20/2016	5/31/2016	5/31/2016	5/28/2016	5/28/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-050-SO-10-12	CFSB-051-SO-0-0.5	CFSB-051-SO-0.5-2	CFSB-051-SO-10-12	CFSB-052-SO-0.5-2	CFSB-052-SO-10-12	CFSB-053-SO-0.5-2	CFSB-053-SO-10-12	CFSB-054-SO-0-0.5	CFSB-054-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	23.4	77 J-	73 J-	81.1 J-	1.55 J-	4.16 J-	25.8 J	2 J+	44 J	58.1 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-054	CFSB-055	CFSB-055	CFSB-055	CFSB-057	CFSB-057	CFSB-057	CFSB-059	CFSB-059	CFSB-059	CFSB-059
			Sample Date:		5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016	5/28/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-054-SO-10-12	CFSB-055-SO-0-0.5	CFSB-055-SO-0.5-2	CFSB-055-SO-10-12	CFSB-057-SO-0-0.5	CFSB-057-SO-0.5-2	CFSB-057-SO-10-12	CFSB-DUP8-SO	CFSB-059-SO-0-0.5	CFSB-059-SO-0.5-2	CFSB-059-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	13.1 J	147 J	129 J	95.4 J	75.7 J-	76.2 J	13.5 J	52.1 J-	51.2 J-	42.5 J-	21.6 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-060	CFSB-060	CFSB-060	CFSB-062	CFSB-062	CFSB-062	CFSB-064	CFSB-064	CFSB-064	CFSB-065
			Sample Date:	5/27/2016	5/27/2016	5/27/2016	6/2/2016	6/2/2016	6/2/2016	6/3/2016	6/3/2016	6/3/2016	6/2/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFSB-060-SO-0-0.5	CFSB-060-SO-0.5-2	CFSB-060-SO-10-12	CFSB-062-SO-0-0.5	CFSB-062-SO-0.5-2	CFSB-062-SO-10-12	CFSB-064-SO-0-0.5	CFSB-064-SO-0.5-2	CFSB-064-SO-10-12	CFSB-065-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	16.4 J	11.3 J	6.74 J	25.9 J	27.5 J	17.3 J	33.3 J	71.2 J	0.19 UJ	46.8 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-065	CFSB-065	CFSB-066	CFSB-066	CFSB-066	CFSB-068	CFSB-068	CFSB-069	CFSB-069	CFSB-069
			Sample Date:	6/2/2016	6/2/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016	5/27/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:	CFSB-065-SO-0.5-2	CFSB-065-SO-10-12	CFSB-066-SO-0-0.5	CFSB-066-SO-0.5-2	CFSB-066-SO-10-12	CFSB-068-SO-0.5-2	CFSB-068-SO-10-12	CFSB-069-SO-0-0.5	CFSB-069-SO-0.5-2	CFSB-069-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	57.1 J	9.92 J	**571 J**	**367 J**	25.2 J	19 J	28.1 J+	36.3 J	39.8 J	6.42 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-071	CFSB-071	CFSB-071	CFSB-071	CFSB-073	CFSB-073	CFSB-073	CFSB-074	CFSB-074	CFSB-074	CFSB-075
			Sample Date:		5/27/2016	5/27/2016	5/27/2016	5/27/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-071-SO-0-0.5	CFSB-071-SO-0.5-2	CFSB-071-SO-10-12	CFSB-DUP7-SO	CFSB-073-SO-0-0.5	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12	CFSB-074-SO-0-0.5	CFSB-074-SO-0.5-2	CFSB-074-SO-10-12	CFSB-075-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	47.3 J	54 J	3.16 J	4.28 J	28.2 J	24.3 J	10.3 J	143 J	8.98 J	28.3 J	43 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-075	CFSB-075	CFSB-079	CFSB-079	CFSB-079	CFSB-080	CFSB-080	CFSB-080	CFSB-082	CFSB-082
			Sample Date:		6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
			Sample Depth (ft-bls):		0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-075-SO-0.5-2	CFSB-075-SO-10-12	CFSB-079-SO-0-0.5	CFSB-079-SO-0.5-2	CFSB-079-SO-10-12	CFSB-080-SO-0-0.5	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12	CFSB-082-SO-0-0.5	CFSB-082-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	33.7 J	26.8 J	55.4 J	20.3 J	21.5 J	35.7 J	8.79 J	10.2 J	30.4 J	18.2 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-082	CFSB-084	CFSB-084	CFSB-084	CFSB-086	CFSB-086	CFSB-086	CFSB-087	CFSB-087	CFSB-087
			Sample Date:		6/1/2016	5/27/2016	5/27/2016	5/27/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-082-SO-10-12	CFSB-084-SO-0-0.5	CFSB-084-SO-0.5-2	CFSB-084-SO-10-12	CFSB-086-SO-0-0.5	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0-0.5	CFSB-087-SO-0.5-2	CFSB-087-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	5.35 J	59.6 J	24.1 J	7.15 J	21.1 J+	12.9 J+	18.6 J+	34.9 J+	29.3 J+	17.2 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-088	CFSB-088	CFSB-088	CFSB-092	CFSB-092	CFSB-092	CFSB-094	CFSB-094	CFSB-094	CFSB-095
			Sample Date:	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFSB-088-SO-0-0.5	CFSB-088-SO-0.5-2	CFSB-088-SO-10-12	CFSB-092-SO-0-0.5	CFSB-092-SO-0.5-2	CFSB-092-SO-10-12	CFSB-094-SO-0-0.5	CFSB-094-SO-0.5-2.0	CFSB-094-SO-10-12	CFSB-095-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	23.5 J+	25.8 J+	5.88 J+	14.1 J	29.9 J	2.35 J+	86.9 J-	63.2 J-	1.49 J-	19.5 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-095	CFSB-095	CFSB-097	CFSB-097	CFSB-097	CFSB-098	CFSB-098	CFSB-098	CFSB-099	CFSB-099
			Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016
			Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-095-SO-0.5-2.0	CFSB-095-SO-10-12	CFSB-097-SO-0-0.5	CFSB-097-SO-0.5-2	CFSB-097-SO-10-12	CFSB-098-SO-0-0.5	CFSB-098-SO-0.5-2	CFSB-098-SO-10-12	CFSB-099-SO-0-0.5	CFSB-099-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	16.9 J-	10.4 J-	80.1 J-	47.6 J-	1.29 J-	93.3 J-	79.9 J-	141 J-	41.7 J+	3.18 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-099	CFSB-100	CFSB-100	CFSB-100	CFSB-101	CFSB-101	CFSB-101	CFSB-102	CFSB-102	CFSB-102
			Sample Date:		5/24/2016	5/24/2016	5/24/2016	5/24/2016	7/21/2016	7/21/2016	7/21/2016	7/13/2016	7/13/2016	7/13/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-099-SO-10-12	CFSB-100-SO-0-0.5	CFSB-100-SO-0.5-2	CFSB-100-SO-10-12	CFSB-101-SO-0-0.5	CFSB-101-SO-0.5-2	CFSB-101-SO-10-12	CFSB-102-SO-0-0.5	CFSB-102-SO-0.5-2	CFSB-102-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	2.87 J+	39.2 J+	90.9 J-	16.6 J+	18.5 J+	10.2 J+	8.08 J+	7.21 J	8.74 J	5.76 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-104	CFSB-104	CFSB-104	CFSB-109	CFSB-109	CFSB-109	CFSB-110	CFSB-110	CFSB-110	CFSB-113
			Sample Date:	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/14/2016	7/14/2016	7/14/2016	8/31/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:	CFSB-104-SO-0-0.5	CFSB-104-SO-0.5-2	CFSB-104-SO-10-12	CFSB-109-SO-0-0.5	CFSB-109-SO-0.5-2	CFSB-109-SO-10-12	CFSB-110-SO-0-0.5	CFSB-110-SO-0.5-2	CFSB-110-SO-10-12	CFSB-113-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	12.6 J	11.4 J	3.46 J	17.4 J	17.7 J	3.26 J	28.4 J	11.2 J	3.14 J	2.97 J+
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-113	CFSB-113	CFSB-114	CFSB-114	CFSB-114	CFSB-115	CFSB-115	CFSB-115	CFSB-116	CFSB-116	CFSB-116
			Sample Date:	8/31/2016	8/31/2016	7/12/2016	7/12/2016	7/12/2016	8/31/2016	8/31/2016	8/31/2016	7/22/2016	7/22/2016	7/22/2016
			Sample Depth (ft-bls):	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	2 - 4	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-113-SO-0.5-2	CFSB-113-SO-2-4	CFSB-114-SO-0-0.5	CFSB-114-SO-0.5-2	CFSB-114-SO-10-12	CFSB-115-SO-0-0.5	CFSB-115-SO-0.5-2	CFSB-115-SO-2-4	CFSB-116-SO-10-12	CFSB-116-SO-0-0.5	CFSB-116-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	1.26 J+	0.8 J+	3.18 J	10.1 J	7.29 J	2.4 J+	1.58 J+	1.4 J+	1.62 J	3.81	1.96 J
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-118	CFSB-118	CFSB-118	CFSB-119	CFSB-119	CFSB-119	CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121
			Sample Date:		7/21/2016	7/21/2016	7/21/2016	7/12/2016	7/12/2016	7/12/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016
			Sample Depth (ft-bls):		0 - 0.5	10 - 12	0.5 - 2	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5
			Sample Designation:		CFSB-118-SO-0-0.5	CFSB-118-SO-10-12	CFSB-118-SO-0.5-2	CFSB-119-SO-0-0.5	CFSB-119-SO-0.5-2	CFSB-119-SO-10-12	CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-DUP1-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	1.8 J+	1.61 J+	1.85 J+	4.81 J	14.6 J	9.41 J	5.63 J	2.43 J-	0.43 J-	13.5 J-	9.05 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-123	CFSB-124	CFSB-124
				Sample Date:	5/18/2016	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
				Sample Designation:	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	10.1 J-	1.38 J-	12.2 J-	5.57 J-	0.57 J-	10.5 J-	9.29 J-	0.58 J-	10.8 J-	6.61 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-124	CFSB-125	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127	CFSB-127	CFSB-127
			Sample Date:		5/19/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-124-SO-10-12	CFSB-125-SO-0-0.5	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	0.92 J-	8.31 J-	8.91 J-	0.97 J-	6.31 J-	5.3 J-	0.75 J-	3.93 J-	1.54 J-	2.61 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-128	CFSB-128	CFSB-128	CFSB-129	CFSB-129	CFSB-129	CFSB-130	CFSB-130	CFSB-131	CFSB-131
			Sample Date:	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	5/24/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
			Sample Designation:	CFSB-128-SO-0-0.5	CFSB-128-SO-0.5-2.0	CFSB-128-SO-10-12	CFSB-129-SO-0-0.5	CFSB-129-SO-0.5-2.0	CFSB-129-SO-10-12	CFSB-130-SO-0.5-2	CFSB-130-SO-10-12	CFSB-131-SO-0.5-2	CFSB-131-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Fluoride	**310**	4700	12	mg/kg	46.7 J-	63.4 J-	10.6 J-	214 J-	203 J-	123 J-	2.46	232 J-	3.82	86.7 J-
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-131	CFSB-131	CFSB-132	CFSB-132	CFSB-132	CFSB-133	CFSB-133	CFSB-133	CFSDP-001	CFSDP-002	CFSDP-007
			Sample Date:	6/17/2016	6/17/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	6/3/2016	08 Sep 2016	08 Sep 2016	08 Sep 2016
			Sample Depth (ft-bls):	18 - 20	22 - 23	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFSB-131-SO-18-20	CFSB-131-SO-22-23	CFSB-132-SO-0-0.5	CFSB-132-SO-0.5-2	CFSB-132-SO-10-12	CFSB-133-SO-0-0.5	CFSB-133-SO-0.5-2	CFSB-133-SO-10-12	CFSDP-001-SO	CFSDP-002-SO	CFSDP-007-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	1.93	46.1	1.78 J	0.31 J	0.24 UJ	2.4 J	0.92 J	0.21 UJ	0.78 J	0.36 J	1.69
Total Organic Carbon (1)	--	--	--	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	8950	7990	15000

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L6. General Chemistry in Soil Samples from Site-wide Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011	CFSDP-012	CFSDP-012	CFSDP-013	CFSDP-017	CFSDP-021	CFSDP-022
				Sample Date:	08 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	06 Sep 2016	08 Sep 2016	06 Sep 2016	06 Sep 2016
				Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
				Sample Designation:	CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO	CFSDP-012-SO	CFSDP-DUP1-SO	CFSDP-013-SO	CFSDP-017-SO	CFSDP-021-SO	CFSDP-022-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	0.65 J	1.62	4.27	1.62	1.3	1.57	1.81	0.83 J	2.6	3.79
Total Organic Carbon (1)	--	--	--	mg/kg	8800	42500	92200	51500	61500	61000	183000	7640	23200	129000

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L7. Dioxins and Furans in Soil Samples from Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFMW-038	CFMW-038	CFMW-038	CFMW-040	CFMW-040	CFMW-040	CFSB-073	CFSB-073	CFSB-073
					Sample Date:	25 Jun 2016	25 Jun 2016	25 Jun 2016	28 Jun 2016	28 Jun 2016	28 Jun 2016	01 Jun 2016	01 Jun 2016	01 Jun 2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFMW-038-SO-0-0.5	CFMW-038-SO-0.5-2	CFMW-038-SO-10-12	CFMW-040-SO-0-0.5	CFMW-040-SO-0.5-2	CFMW-040-SO-10-12	CFSB-073-SO-0-0.5	CFSB-073-SO-0.5-2	CFSB-073-SO-10-12
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	TEF Value	Unit									
1,2,3,4,6,7,8-HpCDD	2200	480	5.9	0.01	pg/g	2.01 J	1.03 J	1.01 J	99.8	0.026 U	1.12 J	50.9	0.58 J	6.5
1,2,3,4,6,7,8-HpCDF	2200	480	5.9	0.01	pg/g	0.48 J	0.26 J	0.26 J	26.9	0.022 U	0.31 J	15.5 J	0.028 U	1.61 J
1,2,3,4,7,8,9-HpCDF	2200	480	5.9	0.01	pg/g	0.078 J	0.041 J	0.021 U	0.34 U	0.027 U	0.027 U	1.89 U	0.033 U	0.065 U
1,2,3,4,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.057 J	0.021 U	0.021 U	3.42 J	0.021 U	0.021 U	1.52 J	0.032 U	0.03 U
1,2,3,4,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.14 J	0.073 J	0.024 U	2.56 J	0.048 J	0.035 J	1.77 J	0.046 U	0.1 J
1,2,3,6,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.12 J	0.075 J	0.019 U	5.07 J	0.02 U	0.096 J	2.72 J	0.03 U	0.3 J
1,2,3,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.076 J	0.024 U	0.038 J	0.76 J	0.017 U	0.026 J	1.05 J	0.042 U	0.049 J
1,2,3,7,8,9-HxCDD	220	48	0.59	0.1	pg/g	0.11 J	0.091 J	0.064 J	4.6 J	0.071 J	0.063 J	2.47 J	0.061 J	0.16 J
1,2,3,7,8,9-HxCDF	220	48	0.59	0.1	pg/g	0.026 U	0.026 U	0.023 U	0.21 U	0.018 U	0.015 U	0.47 U	0.044 U	0.045 U
1,2,3,7,8-PeCDD	22	4.8	0.059	1	pg/g	0.041 U	0.035 U	0.041 U	1.21 J	0.034 U	0.035 U	0.58 U	0.052 U	0.09 J
1,2,3,7,8-PeCDF	733.333	160	1.97	0.0.	pg/g	0.028 U	0.025 U	0.026 U	1.59 J	0.027 U	0.024 U	0.3 U	0.038 U	0.026 U
2,3,4,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.026 U	0.026 U	0.024 U	0.54 J	0.031 J	0.015 U	1.47 J	0.045 U	0.045 U
2,3,4,7,8-PeCDF	73.333	16	0.196	0.3	pg/g	0.029 U	0.026 U	0.027 U	1.71 J	0.028 U	0.025 U	0.31 U	0.04 U	0.027 U
2,3,7,8-TCDD	22	4.8	0.059	1	pg/g	0.029 U	0.028 U	0.032 U	0.58 J	0.034 U	0.029 U	0.33 U	0.049 U	0.03 U
2,3,7,8-TCDF	220	48	0.59	0.1	pg/g	0.089 J	0.048 J	0.093 J	5.26	0.044 U	0.11 J	1.16 J	0.028 U	0.083 J
OCDD	73333.333	16000	196.660	0.0003	pg/g	21.2	11.8	7.13 J	664	3.02 J	7.1 J	369	4.12 J	52.8
OCDF	73333.333	16000	196.666	0.0003	pg/g	1.99 J	0.93 J	0.024 U	97.2	0.027 U	0.97 J	36.8 J	0.041 U	6.72 J
Total HpCDD	--	--	--	--	pg/g	3.55 J	2.04 J	1.78 J	181	0.93 J	2.04 J	85.7	0.99 J	10.8
Total HpCDF	--	--	--	--	pg/g	1.7 J	0.79 J	0.73 J	87.3	0.34 J	0.83 J	53.1	1.1 J	6.52
Total HxCDD	--	--	--	--	pg/g	0.59 J	0.28 J	0.2 J	39.8	0.13 J	0.36 J	12.8 J	0.093 J	1.17 J
Total HxCDF	--	--	--	--	pg/g	0.68 J	0.32 J	0.24 J	23.3	0.08 J	0.27 J	20.5 J	0.046 U	1.64 J
Total PeCDD	--	--	--	--	pg/g	0.041 U	0.035 U	0.041 U	4.67 J	0.034 U	0.035 U	0.58 U	0.052 U	0.09 J
Total PeCDF	--	--	--	--	pg/g	0.14 J	0.13 J	0.075 J	12.5	0.028 U	0.073 J	2.48 J	0.04 U	0.19 J
Total TCDD	--	--	--	--	pg/g	0.032 J	0.028 U	0.052 J	5.61	0.059 J	0.046 J	0.33 U	0.049 U	0.037 J
Total TCDF	--	--	--	--	pg/g	0.13 J	0.12 J	0.21 J	24.1	0.14 J	0.19 J	3.69 J	0.028 U	0.37 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

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Table L7. Dioxins and Furans in Soil Samples from Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	TEF Value	Unit	Sample Location: CFSB-074 Sample Date: 01 Jun 2016 Sample Depth (ft-bls): 0 - 0.5 Sample Designation: CFSB-074-SO-0-0.5	CFSB-074 01 Jun 2016 0.5 - 2 CFSB-074-SO-0.5-2	CFSB-074 01 Jun 2016 10 - 12 CFSB-074-SO-10-12	CFSB-075 01 Jun 2016 0 - 0.5 CFSB-075-SO-0-0.5	CFSB-075 01 Jun 2016 0.5 - 2 CFSB-075-SO-0.5-2	CFSB-075 01 Jun 2016 10 - 12 CFSB-075-SO-10-12	CFSB-079 01 Jun 2016 0 - 0.5 CFSB-079-SO-0-0.5	CFSB-079 01 Jun 2016 0.5 - 2 CFSB-079-SO-0.5-2	CFSB-079 01 Jun 2016 10 - 12 CFSB-079-SO-10-12
1,2,3,4,6,7,8-HpCDD	2200	480	5.9	0.01	pg/g	47.1	1.72 J	6.82	16.2 J	2.91 J	5.89	0.029 U	0.018 U	3.99 J
1,2,3,4,6,7,8-HpCDF	2200	480	5.9	0.01	pg/g	12.7	0.02 U	1.34 J	6.16 J	0.72 J	1.99 J	0.03 U	0.021 U	0.94 J
1,2,3,4,7,8,9-HpCDF	2200	480	5.9	0.01	pg/g	1.77 J	0.024 U	0.063 UJ	1.14 U	0.016 UJ	0.049 U	0.039 U	0.027 U	0.026 U
1,2,3,4,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.091 UJ	0.034 U	0.068 UJ	0.67 J	0.037 J	0.3 J	0.03 U	0.023 U	0.064 J
1,2,3,4,7,8-HxCDF	220	48	0.59	0.1	pg/g	2.04 J	0.088 J	0.28 J	0.58 J	0.11 J	0.4 J	0.037 U	0.028 U	0.046 U
1,2,3,6,7,8-HxCDD	220	48	0.59	0.1	pg/g	3.13 J	0.15 J	0.42 J	1.15 J	0.13 J	0.49 J	0.029 U	0.022 U	0.16 J
1,2,3,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.96 J	0.04 U	0.12 J	0.45 J	0.062 J	0.29 J	0.067 J	0.026 U	0.042 U
1,2,3,7,8,9-HxCDD	220	48	0.59	0.1	pg/g	1.71 J	0.099 J	0.057 UJ	1.42 J	0.087 J	0.51 J	0.026 U	0.019 U	0.1 J
1,2,3,7,8,9-HxCDF	220	48	0.59	0.1	pg/g	0.18 UJ	0.042 U	0.072 UJ	0.37 U	0.016 UJ	0.16 J	0.037 U	0.029 U	0.044 U
1,2,3,7,8-PeCDD	22	4.8	0.059	1	pg/g	0.44 J	0.047 U	0.13 UJ	0.34 U	0.028 J	0.17 J	0.05 U	0.039 U	0.032 U
1,2,3,7,8-PeCDF	733.333	160	1.97	0.0.	pg/g	0.9 J	0.037 U	0.17 UJ	0.21 U	0.015 UJ	0.2 J	0.042 U	0.036 U	0.03 U
2,3,4,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.17 UJ	0.043 U	0.069 UJ	0.35 U	0.04 J	0.17 J	0.036 U	0.028 U	0.045 U
2,3,4,7,8-PeCDF	73.333	16	0.196	0.3	pg/g	0.87 J	0.038 U	0.17 UJ	0.21 U	0.065 J	0.15 J	0.042 U	0.036 U	0.031 U
2,3,7,8-TCDD	22	4.8	0.059	1	pg/g	0.44 J	0.034 U	0.16 UJ	0.23 U	0.016 UJ	0.036 U	0.029 U	0.044 U	0.029 U
2,3,7,8-TCDF	220	48	0.59	0.1	pg/g	1.6 UJ	0.1 J	0.81 J	1.22 J	0.24 J	0.49 J	0.024 U	0.038 U	0.17 J
OCDD	73333.333	16000	196.660	0.0003	pg/g	400	13.3	58.3	108	24.9 J	40.3	0.025 U	0.024 U	33.3
OCDF	73333.333	16000	196.666	0.0003	pg/g	41.4	0.031 U	2.16 J	11.9 J	1.95 J	5.31 J	0.025 U	0.025 U	2.33 J
Total HpCDD	--	--	--	--	pg/g	97	3.36 J	12.9	28.1	5.45 J	10.5	0.53 J	0.46 J	6.85
Total HpCDF	--	--	--	--	pg/g	33.6	1.13 J	3.49 J	15.6 J	2.3 J	5.8	0.37 J	0.25 J	2.85 J
Total HxCDD	--	--	--	--	pg/g	16 J	0.6 J	1.35 J	6.69 J	0.91 J	2.33 J	0.062 J	0.023 U	0.79 J
Total HxCDF	--	--	--	--	pg/g	14.2 J	0.41 J	2.02 J	5.19 J	0.98 J	3.01 J	0.067 J	0.029 U	0.77 J
Total PeCDD	--	--	--	--	pg/g	1.47 J	0.047 U	0.13 UJ	0.34 U	0.065 J	0.22 J	0.05 U	0.039 U	0.032 U
Total PeCDF	--	--	--	--	pg/g	6.26 J	0.24 J	0.17 UJ	1.6 J	0.46 J	0.87 J	0.042 U	0.036 U	0.2 J
Total TCDD	--	--	--	--	pg/g	2.09 J	0.049 J	0.16 UJ	0.33 J	0.071 J	0.28 J	0.029 U	0.044 U	0.12 J
Total TCDF	--	--	--	--	pg/g	11.3 J	0.1 J	0.81 J	4.24 J	0.75 J	2.23	0.047 J	0.038 U	0.36 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L7. Dioxins and Furans in Soil Samples from Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFSB-080	CFSB-080	CFSB-080	CFSB-082	CFSB-082	CFSB-082	CFSB-084	CFSB-084	CFSB-084
					Sample Date:	01 Jun 2016	01 Jun 2016	01 Jun 2016	01 Jun 2016	01 Jun 2016	01 Jun 2016	27 May 2016	27 May 2016	27 May 2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation:	CFSB-080-SO-0-0.5	CFSB-080-SO-0.5-2	CFSB-080-SO-10-12	CFSB-082-SO-0-0.5	CFSB-082-SO-0.5-2	CFSB-082-SO-10-12	CFSB-084-SO-0-0.5	CFSB-084-SO-0.5-2	CFSB-084-SO-10-12
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	TEF Value	Unit									
1,2,3,4,6,7,8-HpCDD	2200	480	5.9	0.01	pg/g	0.023 U	312	79.8	111	0.023 U	0.034 U	24.8 J	5.06 J	0.6 J
1,2,3,4,6,7,8-HpCDF	2200	480	5.9	0.01	pg/g	0.027 U	66.4	18	21.7 J	0.027 U	0.024 U	9.64 J	1.85 J	0.02 U
1,2,3,4,7,8,9-HpCDF	2200	480	5.9	0.01	pg/g	0.034 U	1.67 U	0.24 U	1.29 U	0.035 U	0.03 U	0.86 J	0.059 U	0.024 U
1,2,3,4,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.031 U	2.34 J	0.47 J	0.86 J	0.024 U	0.028 U	0.61 J	0.041 U	0.027 U
1,2,3,4,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.023 U	9.63 J	2.35 J	3.07 J	0.14 J	0.053 J	1.35 J	0.33 J	0.042 U
1,2,3,6,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.03 U	10.8 J	2.53 J	3.13 J	0.11 J	0.076 J	1.44 J	0.45 J	0.024 U
1,2,3,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.044 J	2.86 J	0.84 J	0.98 J	0.11 J	0.029 U	0.78 J	0.065 U	0.038 U
1,2,3,7,8,9-HxCDD	220	48	0.59	0.1	pg/g	0.026 U	5.14 J	0.99 J	2.08 J	0.02 U	0.024 U	0.8 J	0.31 J	0.031 J
1,2,3,7,8,9-HxCDF	220	48	0.59	0.1	pg/g	0.024 U	1.22 U	0.11 U	0.38 U	0.077 J	0.033 U	0.3 U	0.069 U	0.041 U
1,2,3,7,8-PeCDD	22	4.8	0.059	1	pg/g	0.035 U	0.69 U	0.16 J	0.3 U	0.035 U	0.038 U	0.31 U	0.094 J	0.04 U
1,2,3,7,8-PeCDF	733.333	160	1.97	0.0.	pg/g	0.031 U	2.1 J	0.54 J	0.66 J	0.11 J	0.053 U	0.61 J	0.17 J	0.026 U
2,3,4,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.023 U	4.58 J	0.36 J	1.7 J	0.037 U	0.031 U	0.5 J	0.13 J	0.041 U
2,3,4,7,8-PeCDF	73.333	16	0.196	0.3	pg/g	0.031 U	1.88 J	0.48 J	0.6 J	0.041 U	0.053 U	0.45 J	0.051 U	0.027 U
2,3,7,8-TCDD	22	4.8	0.059	1	pg/g	0.022 U	0.58 U	0.028 U	0.23 U	0.042 U	0.03 U	0.29 U	0.048 U	0.03 U
2,3,7,8-TCDF	220	48	0.59	0.1	pg/g	0.019 U	2.02 J	0.28 J	0.79 J	0.1 J	0.031 U	2.14 J	0.39 J	0.031 U
OCDD	73333.333	16000	196.660	0.0003	pg/g	0.022 U	4350	1160	1730	9.36 J	13.1	179	34.1	4.22 J
OCDF	73333.333	16000	196.666	0.0003	pg/g	0.021 U	79.6 J	23.4	31 J	0.027 U	0.023 U	22.2 J	4.06 J	0.046 U
Total HpCDD	--	--	--	--	pg/g	0.87 J	558	142	200	1.89 J	2.05 J	44.4	9.21	1.16 J
Total HpCDF	--	--	--	--	pg/g	0.26 J	239	66	76.7	1.13 J	0.77 J	24.9 J	4.72 J	0.75 J
Total HxCDD	--	--	--	--	pg/g	0.067 J	37.7 J	8.49	12.7 J	0.43 J	0.41 J	8.43 J	2.13 J	0.17 J
Total HxCDF	--	--	--	--	pg/g	0.044 J	178	45.8	51.8	0.6 J	0.26 J	11.1 J	2.13 J	0.042 U
Total PeCDD	--	--	--	--	pg/g	0.035 U	0.69 U	0.16 J	0.3 U	0.035 U	0.038 U	0.31 U	0.094 J	0.04 U
Total PeCDF	--	--	--	--	pg/g	0.031 U	22.7 J	6.56	6.97 J	0.27 J	0.053 U	3.55 J	0.66 J	0.037 J
Total TCDD	--	--	--	--	pg/g	0.022 U	0.58 U	0.25 J	0.23 U	0.042 U	0.15 J	0.74 J	0.048 U	0.03 U
Total TCDF	--	--	--	--	pg/g	0.019 U	2.02 J	1.23	2.34 J	0.1 J	0.031 U	7.12	1.15	0.031 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L7. Dioxins and Furans in Soil Samples from Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

						Sample Location:	CFSB-086	CFSB-086	CFSB-087	CFSB-087	CFSB-087	CFSB-088	CFSB-088	CFSB-088
						Sample Date:	26 May 2016	26 May 2016	26 May 2016	26 May 2016	26 May 2016	26 May 2016	26 May 2016	26 May 2016
						Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
						Sample Designation:	CFSB-086-SO-0-0.5	CFSB-086-SO-0.5-2	CFSB-086-SO-10-12	CFSB-087-SO-0-0.5	CFSB-087-SO-0.5-2	CFSB-087-SO-10-12	CFSB-088-SO-0-0.5	CFSB-088-SO-0.5-2	CFSB-088-SO-10-12
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	TEF Value	Unit									
1,2,3,4,6,7,8-HpCDD	2200	480	5.9	0.01	pg/g		23.4 J	2.46 J	13.2	16.4 J	5.19 J	3.1 J	21.3 J	19.6	0.94 J
1,2,3,4,6,7,8-HpCDF	2200	480	5.9	0.01	pg/g		4.94 J	0.02 U	2.38 J	3.1 J	1.29 J	0.85 J	7.18 J	5.63	0.019 U
1,2,3,4,7,8,9-HpCDF	2200	480	5.9	0.01	pg/g		0.65 J	0.024 U	0.29 J	0.15 U	0.048 U	0.024 U	0.17 U	0.22 U	0.023 U
1,2,3,4,7,8-HxCDD	220	48	0.59	0.1	pg/g		0.25 U	0.064 J	0.2 J	0.17 U	0.04 U	0.098 J	0.33 J	0.56 J	0.057 J
1,2,3,4,7,8-HxCDF	220	48	0.59	0.1	pg/g		0.4 U	0.15 J	0.34 J	0.28 U	0.4 J	0.25 J	0.92 J	0.52 J	0.075 J
1,2,3,6,7,8-HxCDD	220	48	0.59	0.1	pg/g		1.57 J	0.15 J	0.62 J	1.19 J	0.37 J	0.23 J	1.25 J	0.96 J	0.13 J
1,2,3,6,7,8-HxCDF	220	48	0.59	0.1	pg/g		0.36 U	0.091 J	0.16 J	0.25 U	0.14 J	0.046 U	0.21 U	0.3 U	0.055 J
1,2,3,7,8,9-HxCDD	220	48	0.59	0.1	pg/g		0.9 J	0.084 J	0.38 J	0.98 J	0.19 J	0.17 J	0.78 J	0.97 J	0.099 J
1,2,3,7,8,9-HxCDF	220	48	0.59	0.1	pg/g		0.39 U	0.033 U	0.052 U	0.27 U	0.052 J	0.049 U	0.22 U	0.32 U	0.031 U
1,2,3,7,8-PeCDD	22	4.8	0.059	1	pg/g		0.39 U	0.061 U	0.17 J	0.26 U	0.066 U	0.049 J	0.21 U	0.47 U	0.078 J
1,2,3,7,8-PeCDF	733.333	160	1.97	0.0.	pg/g		0.22 U	0.034 U	0.12 J	0.47 J	0.23 J	0.14 J	0.16 U	0.38 U	0.038 U
2,3,4,6,7,8-HxCDF	220	48	0.59	0.1	pg/g		0.39 U	0.04 J	0.11 J	0.27 U	0.14 J	0.097 J	0.28 J	0.32 U	0.044 J
2,3,4,7,8-PeCDF	73.333	16	0.196	0.3	pg/g		0.23 U	0.035 U	0.11 J	0.52 J	0.24 J	0.11 J	0.17 U	0.4 U	0.039 U
2,3,7,8-TCDD	22	4.8	0.059	1	pg/g		0.33 U	0.034 U	0.031 U	0.2 U	0.039 U	0.032 U	0.18 U	0.42 U	0.034 U
2,3,7,8-TCDF	220	48	0.59	0.1	pg/g		1.41 J	0.22 J	0.33 J	2.16 J	0.94 J	0.54 J	1.31 J	1.09	0.069 J
OCDD	73333.333	16000	196.660	0.0003	pg/g		156	17.4	80.3	108	37.4	24.5	145	111	6.25 J
OCDF	73333.333	16000	196.666	0.0003	pg/g		11.1 J	0.022 U	5.11 J	7.9 J	3.09 J	1.84 J	23.2 J	17.3	0.039 U
Total HpCDD	--	--	--	--	pg/g		40.3	4.54 J	22.7	30.4	9.93	6.27	35.7	34.1	1.68 J
Total HpCDF	--	--	--	--	pg/g		14.7 J	1.62 J	7.46	8.3 J	3.41 J	2.27 J	22 J	17.7	0.89 J
Total HxCDD	--	--	--	--	pg/g		5.76 J	0.82 J	3.75 J	5.34 J	1.81 J	1.33 J	5.78 J	5.68	0.64 J
Total HxCDF	--	--	--	--	pg/g		4.86 J	0.79 J	3.47 J	3.01 J	1.46 J	1.06 J	7.03 J	5.64	0.23 J
Total PeCDD	--	--	--	--	pg/g		0.39 U	0.061 U	0.46 J	0.26 U	0.37 J	0.29 J	0.21 U	0.47 U	0.078 J
Total PeCDF	--	--	--	--	pg/g		1.95 J	0.2 J	1.15 J	2.43 J	1.8 J	0.78 J	0.47 J	1.47 J	0.039 U
Total TCDD	--	--	--	--	pg/g		0.33 U	0.15 J	0.4 J	1.2 J	0.65 J	0.38 J	0.3 J	0.42 U	0.034 U
Total TCDF	--	--	--	--	pg/g		3.3 J	0.74 J	1.51	6.76	3.81	1.86	2.82 J	3.89	0.069 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L7. Dioxins and Furans in Soil Samples from Soil Boring and Monitoring Well Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

						Sample Location:	CFSB-092	CFSB-092
						Sample Date:	26 May 2016	26 May 2016
						Sample Depth (ft-bls):	0 - 0.5	0.5 - 2
						Sample Designation:	CFSB-092-SO-0-0.5	CFSB-092-SO-0.5-2
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	TEF Value	Unit			
1,2,3,4,6,7,8-HpCDD	2200	480	5.9	0.01	pg/g	14.7	9.04	0.027 U
1,2,3,4,6,7,8-HpCDF	2200	480	5.9	0.01	pg/g	4.18 J	2.43 J	0.019 U
1,2,3,4,7,8,9-HpCDF	2200	480	5.9	0.01	pg/g	0.49 J	0.046 U	0.022 U
1,2,3,4,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.38 J	0.25 J	0.033 U
1,2,3,4,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.09 U	0.31 J	0.04 U
1,2,3,6,7,8-HxCDD	220	48	0.59	0.1	pg/g	0.97 J	0.53 J	0.03 U
1,2,3,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.42 J	0.19 J	0.036 U
1,2,3,7,8,9-HxCDD	220	48	0.59	0.1	pg/g	0.67 J	0.46 J	0.026 U
1,2,3,7,8,9-HxCDF	220	48	0.59	0.1	pg/g	0.086 U	0.05 U	0.038 U
1,2,3,7,8-PeCDD	22	4.8	0.059	1	pg/g	0.26 J	0.22 J	0.033 U
1,2,3,7,8-PeCDF	733.333	160	1.97	0.0.	pg/g	0.29 J	0.038 U	0.025 U
2,3,4,6,7,8-HxCDF	220	48	0.59	0.1	pg/g	0.31 J	0.12 J	0.038 U
2,3,4,7,8-PeCDF	73.333	16	0.196	0.3	pg/g	0.29 J	0.16 J	0.026 U
2,3,7,8-TCDD	22	4.8	0.059	1	pg/g	0.14 J	0.11 J	0.031 U
2,3,7,8-TCDF	220	48	0.59	0.1	pg/g	1.06 J	0.6 J	0.021 U
OCDD	73333.333	16000	196.660	0.0003	pg/g	104	68.1	2.39 J
OCDF	73333.333	16000	196.666	0.0003	pg/g	10.1 J	6.02 J	0.026 U
Total HpCDD	--	--	--	--	pg/g	26.7	16.1	0.64 J
Total HpCDF	--	--	--	--	pg/g	11.8	7.21	0.24 J
Total HxCDD	--	--	--	--	pg/g	4.06 J	2.94 J	0.092 U
Total HxCDF	--	--	--	--	pg/g	5.03 J	3.2 J	0.04 U
Total PeCDD	--	--	--	--	pg/g	0.79 J	0.48 J	0.042 J
Total PeCDF	--	--	--	--	pg/g	1.96 J	1.06 J	0.026 U
Total TCDD	--	--	--	--	pg/g	0.73 J	0.46 J	0.031 U
Total TCDF	--	--	--	--	pg/g	3.6	2.24	0.021 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-001	CFISS-001	CFISS-002	CFISS-002	CFISS-002	CFISS-002	CFISS-003	CFISS-003	CFISS-004
			Sample Date:	6/14/2016	6/14/2016	6/14/2016	6/14/2016	7/19/2016	7/19/2016	6/15/2016	6/15/2016	6/15/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-001-SO-0-0.5	CFISS-001-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-003-SO-0-0.5	CFISS-003-SO-0.5-2	CFISS-004-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.032 U	0.032 U	0.032 U	0.028 UJ	0.029 U	0.031 U	0.031 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.028 U	0.028 U	0.028 U	0.025 UJ	0.025 U	0.027 U	0.027 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.099 U	0.1 U	0.1 U	0.099 U	0.089 UJ	0.089 U	0.098 U	0.096 U	0.099 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.016 U	0.015 U	0.015 U	0.014 UJ	0.014 U	0.015 U	0.015 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.035 U	0.035 U	0.035 U	0.031 UJ	0.031 U	0.034 U	0.034 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.038 U	0.037 U	0.037 U	0.033 UJ	0.033 U	0.036 U	0.036 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.011 U	0.011 U	0.011 U	0.0095 UJ	0.0095 U	0.01 U	0.01 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0087 U	0.0089 U	0.0088 U	0.0088 U	0.0078 UJ	0.0079 U	0.0086 U	0.0085 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.081 U	0.083 U	0.082 U	0.082 U	0.073 UJ	0.074 U	0.081 U	0.079 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 UJ	0.28 U	0.28 U	0.28 U	0.25 UJ	0.25 U	0.28 U	0.27 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.015 U	0.015 U	0.015 U	0.013 UJ	0.013 U	0.015 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.02 U	0.02 U	0.02 U	0.018 UJ	0.018 U	0.019 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0084 U	0.0085 U	0.0084 U	0.0084 U	0.0075 UJ	0.0076 U	0.0083 U	0.0082 U	0.0084 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0094 U	0.0096 U	0.0095 U	0.0094 U	0.0085 UJ	0.0085 U	0.0093 U	0.0091 U	0.0094 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0081 U	0.0083 U	0.011 J	0.0082 U	0.011 J-	0.0074 U	0.066 J	0.04 J	0.073 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.014 UJ	0.015 U	0.016 U	0.016 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.013 U	0.013 U	0.012 U	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0098 U	0.01 U	0.0099 U	0.0099 U	0.0089 UJ	0.0089 U	0.0097 U	0.0096 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.041 U	0.042 U	0.042 U	0.041 U	0.037 UJ	0.037 U	0.041 U	0.04 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.0099 UJ	0.0099 U	0.011 U	0.011 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.098 UJ	0.1 U	0.099 U	0.099 U	0.089 UJ	0.089 U	0.098 U	0.096 U	0.099 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.01 UJ	0.011 U	0.012 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.014 UJ	0.014 U	0.016 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0095 U	0.0097 U	0.0096 U	0.0096 U	0.0086 UJ	0.0086 U	0.0094 U	0.0093 U	0.0095 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.01 UJ	0.01 U	0.011 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.013 UJ	0.013 U	0.014 U	0.014 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.18 U	0.18 U	0.18 U	0.16 UJ	0.16 U	0.18 U	0.17 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.051 J	0.0091 U	0.045 J	0.009 U	0.04 J-	0.0081 U	0.25 J	0.077 J	0.45
Acenaphthylene	--	--	--	mg/kg	0.0095 U	0.0097 U	0.0096 U	0.0096 U	0.0086 UJ	0.0086 U	0.0094 U	0.0093 U	0.0095 U
Acetophenone	780	12000	0.058	mg/kg	0.008 U	0.0082 U	0.0081 U	0.0081 U	0.0072 UJ	0.0073 U	0.008 U	0.0078 U	0.0081 U
Anthracene	1800	23000	5.8	mg/kg	0.09 J	0.036 U	0.083 J	0.035 U	0.083 J-	0.032 U	0.36 J	0.11 J	1.1
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.017 U	0.017 U	0.017 U	0.015 UJ	0.015 U	0.016 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 UJ	0.029 U	0.028 U	0.028 U	0.025 UJ	0.025 U	0.028 U	0.027 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**0.41 J-**	0.031 U	**0.41**	0.057	**0.37 J-**	0.028 U	**1.2**	**0.32**	**2.8**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.44**	0.011 U	**0.45**	**0.064**	**0.38 J-**	0.01 U	**1.4**	**0.37**	**2.6**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.8 J-**	0.019 J	**0.8**	0.14	**0.75 J-**	0.039	**2.3**	**0.53**	**3.4**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.43	0.022 U	0.37	0.057 J	0.34 J-	0.019 U	1.4	0.37	1.8
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.28 J-	0.016 U	0.33	0.052	0.26 J-	0.015 U	0.92	0.22	1.6
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.012 U	0.012 U	0.012 U	0.01 UJ	0.01 U	0.011 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0087 U	0.0089 U	0.0088 U	0.0088 U	0.0078 UJ	0.0079 U	0.0086 U	0.0085 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.015 U	0.015 U	0.015 U	0.013 UJ	0.013 U	0.014 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.012 U	0.011 U	0.011 U	0.01 UJ	0.01 U	0.011 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 UJ	0.027 U	0.027 U	0.027 U	0.024 UJ	0.024 U	0.026 U	0.026 U	0.027 U
Carbazole	--	--	--	mg/kg	0.072 J	0.0093 U	0.075 J	0.0092 U	0.065 J-	0.0083 U	0.23 J	0.063 J	0.8
Chrysene	**16**	290	1.2	mg/kg	0.61 J-	0.013 J	0.68	0.1 J	0.65 J-	0.023 J	1.9	0.42	3.1
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.13**	0.02 U	**0.08**	0.019 U	**0.092 J-**	0.017 U	**0.4**	**0.098**	**0.59**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.022 J	0.011 U	0.019 J	0.011 U	0.026 J-	0.01 U	0.13 J	0.036 J	0.19 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.011 U	0.011 U	0.011 U	0.0095 UJ	0.0095 U	0.01 U	0.01 U	0.011 U
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.0097 UJ	0.0097 U	0.011 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.01 UJ	0.01 U	0.011 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.019 U	0.019 U	0.019 U	0.017 UJ	0.017 U	0.019 U	0.018 U	0.019 U
Fluoranthene	240	3000	8.9	mg/kg	0.87	0.014 J	0.87	0.11 J	0.86 J-	0.021 J	2.6	0.63	6.8
Fluorene	240	3000	0.54	mg/kg	0.031 J	0.0082 U	0.028 J	0.0081 U	0.037 J-	0.0073 U	0.21 J	0.067 J	0.39
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.015 U	0.015 U	0.015 U	0.013 UJ	0.014 U	0.015 U	0.015 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.011 U	0.01 U	0.01 U	0.0094 UJ	0.0094 UJ	0.01 U	0.01 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.023 U	0.023 U	0.023 U	0.023 U	0.021 UJ	0.021 U	0.023 U	0.022 U	0.023 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-001	CFISS-001	CFISS-002	CFISS-002	CFISS-002	CFISS-002	CFISS-003	CFISS-003	CFISS-004
			Sample Date:	6/14/2016	6/14/2016	6/14/2016	6/14/2016	7/19/2016	7/19/2016	6/15/2016	6/15/2016	6/15/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-001-SO-0-0.5	CFISS-001-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-003-SO-0-0.5	CFISS-003-SO-0.5-2	CFISS-004-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 UJ	0.014 U	0.014 U	0.014 U	0.012 UJ	0.012 UJ	0.013 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**0.44**	0.025 U	**0.38**	0.056	**0.38 J-**	0.022 U	**1.4**	**0.34**	**2.1**
Isophorone	570	2400	0.026	mg/kg	0.0079 U	0.0081 U	0.008 U	0.008 U	0.0072 J-	0.0072 U	0.0079 U	0.0077 U	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0094 U	0.0096 U	0.025 J	0.0094 U	0.022 J-	0.0085 UJ	0.16 J	0.064 J	0.12 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.01 UJ	0.011 U	0.012 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.013 U	0.013 U	0.012 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.033 UJ	0.034 U	0.034 U	0.034 U	0.03 UJ	0.03 U	0.033 U	0.033 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.045 UJ	0.046 U	0.045 U	0.045 U	0.04 UJ	0.04 U	0.044 U	0.044 U	0.045 U
Phenanthrene	--	--	--	mg/kg	0.47 J-	0.01 U	0.48	0.056 J	0.49 J-	0.011 J	1.6	0.42	4.3
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.012 U
Pyrene	180	2300	1.3	mg/kg	0.79 J-	0.017 U	0.86	0.093 J	0.7 J-	0.017 J	1.8	0.5	4.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-004	CFISS-005	CFISS-005	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006
					Sample Date:	6/15/2016	6/16/2016	6/16/2016	6/17/2016	6/17/2016	6/17/2016	7/19/2016	7/19/2016	7/19/2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2
					Sample Designation:	CFISS-004-SO-0.5-2	CFISS-005-SO-0-0.5	CFISS-005-SO-0.5-2	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.032 U	0.031 U	0.031 U	1.6 U	0.033 UJ	0.33 U	0.028 U	0.029 U	0.14 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.028 U	0.027 U	0.027 U	1.4 U	0.029 U	0.28 U	0.025 U	0.025 U	0.12 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.1 U	0.098 U	0.098 U	5.1 U	0.1 UJ	1 U	0.088 U	0.089 U	0.44 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.015 U	0.015 U	0.015 U	0.79 U	0.016 U	0.16 U	0.014 U	0.014 U	0.068 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.035 U	0.034 U	0.034 U	1.8 U	0.036 U	0.36 U	0.031 U	0.031 U	0.15 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.037 U	0.036 U	0.036 U	1.9 U	0.038 UJ	0.38 U	0.033 U	0.033 U	0.16 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.011 U	0.01 U	0.01 U	0.54 U	0.011 UJ	0.11 U	0.0094 U	0.0095 U	0.047 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.0088 U	0.0086 U	0.0086 U	0.45 U	0.0091 UJ	0.09 U	0.0078 U	0.0079 U	0.039 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.082 U	0.08 U	0.081 U	4.2 U	0.085 UJ	0.84 U	0.073 U	0.074 U	0.36 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.28 U	0.28 U	0.28 U	14 U	0.29 UJ	2.9 U	0.25 U	0.25 U	1.2 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.015 U	0.014 U	0.015 U	0.76 U	0.015 U	0.15 U	0.013 U	0.013 U	0.065 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.02 U	0.019 U	0.019 U	1 U	0.021 U	0.2 U	0.018 U	0.018 U	0.087 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.0085 U	0.0083 U	0.0083 U	0.43 U	0.0088 UJ	0.086 U	0.0075 U	0.0076 U	0.037 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.0095 U	0.0093 U	0.0093 U	0.49 U	0.0098 UJ	0.097 U	0.0084 U	0.0085 U	0.042 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.0082 U	0.022 J	0.076 J	0.85 J	0.034 J-	0.44 J	0.017 J	0.018 J	0.067 J
2-Methylphenol	320	4100	0.075	mg/kg		0.016 U	0.016 U	0.016 U	0.83 U	0.017 UJ	0.17 U	0.014 U	0.015 U	0.072 U
2-Nitroaniline	63	800	0.008	mg/kg		0.012 U	0.012 U	0.012 U	0.63 U	0.013 U	0.13 U	0.011 U	0.011 U	0.054 U
2-Nitrophenol	--	--	--	mg/kg		0.013 U	0.012 U	0.012 U	0.64 U	0.013 UJ	0.13 U	0.011 UJ	0.011 UJ	0.055 UJ
3 & 4 Methylphenol	--	--	--	mg/kg		0.0099 U	0.0097 U	0.0097 U	0.51 U	0.01 UJ	0.1 U	0.0088 U	0.0089 U	0.044 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.042 U	0.041 U	0.041 U	2.1 U	0.043 U	0.43 U	0.037 U	0.037 U	0.18 U
3-Nitroaniline	--	--	--	mg/kg		0.011 U	0.011 U	0.011 U	0.57 U	0.011 U	0.11 U	0.0098 U	0.0099 U	0.049 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.1 U	0.098 U	0.098 U	5.1 U	0.1 UJ	1 U	0.088 U	0.089 U	0.44 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.012 U	0.012 U	0.012 U	0.6 U	0.012 UJ	0.12 U	0.01 U	0.011 U	0.052 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.016 U	0.016 U	0.016 U	0.82 U	0.017 U	0.16 U	0.014 U	0.014 U	0.071 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.0096 U	0.0094 U	0.0094 U	0.49 U	0.0099 U	0.098 U	0.0085 U	0.0086 U	0.042 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.011 U	0.011 U	0.011 U	0.57 U	0.012 UJ	0.11 U	0.0099 U	0.01 U	0.049 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.014 U	0.014 U	0.014 U	0.72 U	0.015 U	0.14 U	0.012 U	0.013 U	0.062 UJ
4-Nitrophenol	--	--	--	mg/kg		0.18 U	0.18 U	0.18 U	9.2 U	0.19 U	1.8 U	0.16 U	0.16 U	0.79 U
Acenaphthene	360	4500	0.55	mg/kg		0.027 J	0.13 J	0.34 J	7.4 J	0.26 J	2.9 J	0.16 J	0.14 J	0.63 J
Acenaphthylene	--	--	--	mg/kg		0.0096 U	0.0094 U	0.0094 U	0.79 J	0.0099 UJ	0.098 UJ	0.0085 U	0.0086 U	0.042 U
Acetophenone	780	12000	0.058	mg/kg		0.0081 U	0.008 U	0.008 U	0.42 U	0.0084 U	0.083 U	0.0072 U	0.0073 U	0.036 U
Anthracene	1800	23000	5.8	mg/kg		0.044 J	0.2 J	0.58	26 J	0.65 J-	7.6 J	0.52	0.53	2
Atrazine	2.4	10	0.0002	mg/kg		0.017 U	0.016 U	0.016 U	0.85 U	0.017 U	0.17 U	0.015 U	0.015 U	0.073 U
Benzaldehyde	170	820	0.0041	mg/kg		0.028 U	0.028 U	0.028 U	1.5 U	0.029 UJ	0.29 U	0.025 U	0.025 U	0.13 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		0.16	**0.7**	**1.4**	**77 J**	**1.8 J-**	**22 J**	**1.7**	**1.7**	**5.9**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**0.18**	**0.82**	**1.6**	**75 J**	**1.9 J-**	**23 J**	**2**	**2**	**6.5**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**0.27**	**1.4**	**2.2**	**100 J**	**2.4 J-**	**30 J**	**2.5**	**2.6**	**7.9**
Benzo[g,h,i]perylene	--	--	--	mg/kg		0.16 J	0.83	1.2	49 J	1.5	19 J	1.6	1.8	6.1 J+
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.082	0.45	0.82	**36 J**	0.93	**13 J**	0.99	0.85	**2.8**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.012 U	0.011 U	0.011 U	0.6 U	0.012 UJ	0.12 U	0.01 U	0.01 U	0.051 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.0088 U	0.0086 U	0.0086 U	0.45 U	0.0091 UJ	0.09 U	0.0078 U	0.0079 U	0.039 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.015 U	0.014 U	0.014 U	0.75 U	0.015 UJ	0.15 U	0.013 U	0.013 U	0.064 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.012 U	0.011 U	0.011 U	0.59 U	0.012 UJ	0.12 U	0.01 U	0.01 U	0.051 U
Caprolactam	3100	40000	0.25	mg/kg		0.027 U	0.026 U	0.026 U	1.4 U	0.028 UJ	0.27 U	0.024 U	0.024 U	0.12 U
Carbazole	--	--	--	mg/kg		0.029 J	0.13 J	0.33 J	15 J	0.44	4.4 J	0.3 J	0.31 J	1 J
Chrysene	**16**	290	1.2	mg/kg		0.2 J	1.1	1.8	**88 J**	2 J-	**25 J**	1.9	1.9	6.5
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**0.043**	**0.21**	**0.34**	**13 J**	**0.35 J**	**4.4 J**	**0.39**	**0.46**	**1.6**
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.012 J	0.062 J	0.21 J	4.5 J	0.17 J-	2.1 J	0.11 J	0.1 J	0.45 J
Diethyl phthalate	5100	66000	0.61	mg/kg		0.011 U	0.01 U	0.01 U	0.54 U	0.011 U	0.11 U	0.0094 U	0.0095 U	0.047 U
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.011 U	0.011 U	0.56 U	0.011 UJ	0.11 U	0.0096 U	0.0097 U	0.048 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U	0.011 U	0.57 U	0.012 U	0.11 U	0.0099 U	0.01 U	0.049 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.019 U	0.019 U	0.97 U	0.02 U	0.19 U	0.017 U	0.017 U	0.083 U
Fluoranthene	240	3000	8.9	mg/kg		0.33 J	1.4	3	130 J	4 J-	40 J	3.7	3.6	10
Fluorene	240	3000	0.54	mg/kg		0.022 J	0.1 J	0.31 J	7.9 J	0.28 J-	2.9 J	0.17 J	0.17 J	0.68 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.015 U	0.015 U	0.78 U	0.016 UJ	0.15 U	0.013 U	0.014 U	0.067 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.011 U	0.01 U	0.01 U	0.54 U	0.011 UJ	0.11 U	0.0093 UJ	0.0094 UJ	0.046 UJ
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 U	0.023 U	0.023 U	1.2 U	0.024 U	0.24 U	0.021 U	0.021 U	0.1 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-004	CFISS-005	CFISS-005	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006
			Sample Date:	6/15/2016	6/16/2016	6/16/2016	6/17/2016	6/17/2016	6/17/2016	7/19/2016	7/19/2016	7/19/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-004-SO-0.5-2	CFISS-005-SO-0-0.5	CFISS-005-SO-0.5-2	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Hexachloroethane	1.8	8	0.0002	mg/kg	0.014 U	0.013 U	0.013 U	0.7 U	0.014 UJ	0.14 U	0.012 UJ	0.012 UJ	0.06 UJ
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**0.17**	**0.89**	**1.3**	**54 J**	**1.5**	**20 J**	**1.7**	**1.9**	**6.4**
Isophorone	570	2400	0.026	mg/kg	0.008 U	0.0079 U	0.0079 U	0.41 U	0.0083 UJ	0.082 U	0.0071 U	0.0072 U	0.035 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0095 U	0.047 J	0.16 J	2.5 J	0.17 J-	1.7 J	0.035 J-	0.037 J-	0.18 J-
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.012 U	0.012 U	0.6 U	0.012 UJ	0.12 U	0.01 U	0.011 U	0.052 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.013 U	0.012 U	0.012 U	0.64 U	0.013 U	0.13 U	0.011 U	0.011 U	0.055 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.034 U	0.033 U	0.033 U	1.7 UJ	0.035 UJ	0.35 UJ	0.03 U	0.03 U	0.15 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.045 U	0.044 U	0.044 U	2.3 U	0.047 UJ	0.46 U	0.04 U	0.04 U	0.2 U
Phenanthrene	--	--	--	mg/kg	0.2 J	0.82	2	110 J	2.8 J-	33 J	2.3	2.2	8.3
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.012 U	0.63 U	0.013 UJ	0.12 U	0.011 U	0.011 U	0.054 U
Pyrene	180	2300	1.3	mg/kg	0.25 J	1.1	1.9	140 J	2.8 J-	44 J	3.3	3.2	12

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-007	CFISS-007	CFISS-008	CFISS-008	CFISS-008	CFISS-008	CFISS-009	CFISS-009	CFISS-010
			Sample Date:	6/17/2016	6/17/2016	6/18/2016	6/18/2016	7/26/2016	7/26/2016	6/22/2016	6/22/2016	6/22/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-007-SO-0-0.5	CFISS-007-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-009-SO-0-0.5	CFISS-009-SO-0.5-2	CFISS-010-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.031 U	0.031 U	0.03 U	0.028 U	0.028 U	0.032 U	0.032 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.027 U	0.027 U	0.026 U	0.024 U	0.024 U	0.028 U	0.028 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.097 U	0.098 U	0.095 U	0.087 U	0.088 U	0.1 U	0.099 U	0.098 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.015 U	0.015 U	0.013 U	0.013 U	0.016 U	0.015 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.034 U	0.034 U	0.033 U	0.031 U	0.031 U	0.036 U	0.035 U	0.035 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.036 U	0.036 U	0.035 U	0.032 U	0.033 U	0.038 U	0.037 U	0.037 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.0092 U	0.0093 U	0.011 U	0.011 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0088 U	0.0086 U	0.0086 U	0.0084 U	0.0077 U	0.0077 U	0.009 U	0.0087 U	0.0087 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.082 U	0.08 U	0.081 U	0.078 U	0.071 U	0.072 U	0.083 U	0.081 U	0.081 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.27 U	0.28 U	0.27 U	0.25 U	0.25 UJ	0.29 U	0.28 U	0.28 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.014 U	0.015 U	0.014 U	0.013 U	0.013 U	0.015 U	0.015 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.019 U	0.02 U	0.019 U	0.017 U	0.017 U	0.02 U	0.02 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0085 U	0.0082 U	0.0083 U	0.008 U	0.0074 U	0.0074 U	0.0086 U	0.0084 U	0.0083 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0095 U	0.0092 U	0.0093 U	0.009 U	0.0083 U	0.0083 U	0.0096 U	0.0094 U	0.0093 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.066 J	0.22 J	0.015 J	0.0078 U	0.0079 J	0.0082 J	0.0084 U	0.0082 U	0.012 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.016 U	0.015 U	0.014 U	0.014 U	0.017 U	0.016 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.01 U	0.0097 U	0.0098 U	0.0094 U	0.0086 U	0.0087 U	0.01 U	0.0098 U	0.0098 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.041 U	0.041 U	0.04 U	0.036 U	0.037 U	0.042 U	0.041 U	0.041 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.01 U	0.0096 U	0.0097 U	0.011 U	0.011 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.097 U	0.098 U	0.094 U	0.087 U	0.088 U	0.1 U	0.099 U	0.098 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	0.012 U	0.011 U	0.01 U	0.01 U	0.012 U	0.012 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	0.016 U	0.015 U	0.014 U	0.014 U	0.016 U	0.016 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0096 U	0.0093 U	0.0094 U	0.0091 U	0.0084 U	0.0084 U	0.0098 U	0.0095 U	0.0095 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.0097 U	0.0098 U	0.011 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.014 U	0.013 U	0.012 U	0.012 U	0.014 U	0.014 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 U	0.18 U	0.17 U	0.16 U	0.16 U	0.18 U	0.18 U	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.21 J	0.5	0.16 J	0.019 J	0.067 J	0.074 J	0.036 J	0.009 U	0.055 J
Acenaphthylene	--	--	--	mg/kg	0.0096 U	0.029 J	0.0094 U	0.0091 U	0.0084 U	0.0084 U	0.0098 U	0.0095 U	0.0095 U
Acetophenone	780	12000	0.058	mg/kg	0.0082 U	0.0079 U	0.008 U	0.0077 U	0.0071 U	0.0071 U	0.0083 U	0.0081 U	0.008 U
Anthracene	1800	23000	5.8	mg/kg	0.4	0.93	0.22 J	0.034 U	0.089 J	0.094 J	0.075 J	0.035 U	0.12 J
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.016 U	0.016 U	0.016 U	0.014 U	0.015 U	0.017 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.029 U	0.028 U	0.028 U	0.027 U	0.025 U	0.025 U	0.029 U	0.028 U	0.028 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**1.9**	**2.8**	**0.79**	0.11	**0.32**	**0.26**	**0.68**	0.047	**0.66**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**2.2**	**2.6**	**0.96**	**0.12**	**0.38**	**0.3**	**0.67**	**0.045**	**0.75**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**3.1**	**3.1**	**1.3**	**0.2**	**0.53**	**0.41**	**1.4**	0.068	**1.3**
Benzo[g,h,i]perylene	--	--	--	mg/kg	2.2	1.8	1	0.097 J	0.36	0.23 J+	0.6	0.051 J	0.87
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	1.3	1.3	0.63	0.085	0.16	0.18	0.55	0.031 J	0.44
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U	0.012 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0088 U	0.0086 U	0.0086 U	0.0084 U	0.0077 U	0.0077 U	0.009 U	0.0087 U	0.0087 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.015 U	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.026 U	0.026 U	0.025 U	0.023 U	0.024 U	0.027 U	0.027 U	0.026 U
Carbazole	--	--	--	mg/kg	0.3 J	0.58	0.15 J	0.021 J	0.059 J	0.05 J	0.15 J	0.0092 U	0.13 J
Chrysene	**16**	290	1.2	mg/kg	2.6	2.9	1.1	0.18 J	0.42	0.36	1.1	0.054 J	0.91
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.59**	**0.5**	0.019 U	**0.024 J**	**0.069**	**0.064**	**0.17**	0.019 U	**0.24**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.11 J	0.17 J	0.046 J	0.011 U	0.022 J	0.027 J	0.013 J	0.011 U	0.023 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.0092 U	0.0093 U	0.011 U	0.011 U	0.01 U
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.01 U	0.0094 U	0.0095 U	0.011 U	0.011 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.07 J	0.055 J	0.059 J	0.011 U	0.0097 U	0.0098 U	0.011 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.018 U	0.019 U	0.018 U	0.017 U	0.017 U	0.019 U	0.019 U	0.019 U
Fluoranthene	240	3000	8.9	mg/kg	3.6	5.5	1.6	0.25 J	0.66	0.56	1.2	0.088 J	1.3
Fluorene	240	3000	0.54	mg/kg	0.15 J	0.4	0.1 J	0.014 J	0.048 J	0.054 J	0.0083 U	0.0081 U	0.04 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.015 U	0.015 U	0.014 U	0.013 U	0.013 U	0.015 U	0.015 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.0091 U	0.0092 U	0.011 U	0.01 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.023 U	0.023 U	0.023 U	0.022 U	0.02 U	0.02 U	0.024 U	0.023 U	0.023 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-007	CFISS-007	CFISS-008	CFISS-008	CFISS-008	CFISS-008	CFISS-009	CFISS-009	CFISS-010
			Sample Date:	6/17/2016	6/17/2016	6/18/2016	6/18/2016	7/26/2016	7/26/2016	6/22/2016	6/22/2016	6/22/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-007-SO-0-0.5	CFISS-007-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-009-SO-0-0.5	CFISS-009-SO-0.5-2	CFISS-010-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Hexachloroethane	1.8	8	0.0002	mg/kg	0.014 U	0.013 U	0.013 U	0.013 U	0.012 U	0.012 U	0.014 U	0.014 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**2.3**	**2.1**	**1**	0.098	**0.41**	**0.26**	**0.61**	0.048	**0.88**
Isophorone	570	2400	0.026	mg/kg	0.008 U	0.0078 U	0.0079 U	0.0076 U	0.007 U	0.007 U	0.0082 U	0.0079 U	0.0079 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.096 J	0.19 J	0.028 J	0.009 U	0.014 J	0.016 J	0.0096 U	0.0094 U	0.031 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.011 U	0.012 U	0.011 U	0.01 U	0.01 U	0.012 U	0.012 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.013 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.034 UJ	0.033 UJ	0.033 UJ	0.032 UJ	0.029 U	0.03 U	0.034 U	0.034 U	0.033 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.045 U	0.044 U	0.044 U	0.043 U	0.039 U	0.04 U	0.046 U	0.045 U	0.045 U
Phenanthrene	--	--	--	mg/kg	2.1	3.8	1.1	0.18 J	0.47	0.49	0.42	0.057 J	0.62
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U
Pyrene	180	2300	1.3	mg/kg	3.1	4.5	1.8	0.25 J	0.65	0.64	0.92	0.061 J	0.95

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-010	CFISS-011	CFISS-011	CFISS-012	CFISS-012	CFISS-013	CFISS-013	CFISS-014	CFISS-014
			Sample Date:	6/22/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/20/2016	6/20/2016	6/20/2016	6/20/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-010-SO-0.5-2	CFISS-011-SO-0-0.5	CFISS-011-SO-0.5-2	CFISS-012-SO-0-0.5	CFISS-012-SO-0.5-2	CFISS-013-SO-0-0.5	CFISS-013-SO-0.5-2	CFISS-014-SO-0-0.5	CFISS-014-SO-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.031 U	0.031 U	0.03 U	0.61 U	0.6 U	0.3 U	0.031 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.027 U	0.027 U	0.027 U	0.53 U	0.52 U	0.27 U	0.027 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.097 U	0.099 U	0.095 U	1.9 U	1.9 U	0.96 U	0.096 U	0.094 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.016 U	0.015 U	0.015 U	0.015 U	0.29 U	0.29 U	0.15 U	0.015 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.036 U	0.034 U	0.035 U	0.034 U	0.67 U	0.66 U	0.34 U	0.034 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.038 U	0.036 U	0.037 U	0.036 U	0.71 U	0.7 U	0.36 U	0.036 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.2 U	0.2 U	0.1 U	0.01 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0089 U	0.0085 U	0.0087 U	0.0084 U	0.17 U	0.17 U	0.084 U	0.0084 U	0.0083 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.083 U	0.08 U	0.081 U	0.078 U	1.6 U	1.5 U	0.79 U	0.079 U	0.078 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.29 U	0.27 U	0.28 U	0.27 U	5.4 U	5.3 U	2.7 U	0.27 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.014 U	0.015 U	0.014 U	0.28 U	0.28 U	0.14 U	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.019 U	0.02 U	0.019 U	0.38 U	0.37 U	0.19 U	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0086 U	0.0082 U	0.0084 U	0.0081 U	0.16 U	0.16 U	0.081 U	0.0081 U	0.008 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0096 U	0.0092 U	0.0094 U	0.0091 U	0.18 U	0.18 U	0.091 U	0.0091 U	0.009 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0083 U	0.06 J	0.018 J	0.12 J	2.7 J	3.7 J	0.7 J	0.015 J	0.0083 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.016 U	0.016 U	0.31 U	0.31 U	0.16 U	0.016 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.24 U	0.23 U	0.12 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.012 U	0.012 U	0.012 U	0.24 U	0.24 U	0.12 U	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.01 U	0.0096 U	0.0098 U	0.0095 U	0.19 U	0.19 U	0.095 U	0.0095 U	0.0094 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.04 U	0.041 U	0.04 U	0.8 U	0.79 U	0.4 U	0.04 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.21 U	0.21 U	0.11 U	0.011 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.097 U	0.098 U	0.095 U	1.9 U	1.9 U	0.95 U	0.096 U	0.094 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	0.012 U	0.011 U	0.22 U	0.22 U	0.11 U	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	0.016 U	0.015 U	0.31 U	0.3 U	0.15 U	0.015 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0097 U	0.0093 U	0.0095 U	0.0092 U	0.18 U	0.18 U	0.092 U	0.0092 U	0.0091 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.21 U	0.21 U	0.11 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.014 U	0.013 U	0.27 U	0.27 U	0.14 U	0.014 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 U	0.18 U	0.17 U	3.4 U	3.4 U	1.7 U	0.17 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0091 U	0.17 J	0.057 J	0.51	25	7.1	3.9	0.085 J	0.047 J
Acenaphthylene	--	--	--	mg/kg	0.0097 U	0.0093 U	0.0095 U	0.013 J	0.18 U	0.18 U	0.092 U	0.0092 U	0.0091 U
Acetophenone	780	12000	0.058	mg/kg	0.0082 U	0.0079 U	0.008 U	0.0078 U	0.16 U	0.15 U	0.078 U	0.0078 U	0.0077 U
Anthracene	1800	23000	5.8	mg/kg	0.036 U	0.29 J	0.097 J	1	34	14	8.7	0.2 J	0.1 J
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.016 U	0.016 U	0.016 U	0.32 U	0.31 U	0.16 U	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.029 U	0.028 U	0.028 U	0.027 U	0.54 U	0.54 U	0.27 U	0.027 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.089	**1.2**	**0.25**	**3.9**	**48**	**34**	**19**	**1.1**	**0.38**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.091**	**1.3**	**0.27**	**4.3**	**46**	**30**	**16**	**1.2**	**0.34**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.14	**1.8**	**0.37**	**5.7**	**56**	**39**	**24**	**3.2**	**0.87**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.058 J	1.8	0.24 J	5.4	29	21	12	1.7	0.38
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.063	0.67	0.15	**2**	**20**	**18**	**8.7**	0.9	0.26
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.22 U	0.22 U	0.11 U	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0089 U	0.0085 U	0.0087 U	0.0084 U	0.17 U	0.17 U	0.084 U	0.0084 U	0.0083 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.018 J	0.014 U	0.014 U	0.28 U	0.27 U	0.14 U	0.047 J	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.22 U	0.22 U	0.11 U	0.011 U	0.068 J
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.026 U	0.027 U	0.026 U	0.51 U	0.51 U	0.26 U	0.026 U	0.025 U
Carbazole	--	--	--	mg/kg	0.012 J	0.23 J	0.055 J	0.62	21	8.9	5.2	0.18 J	0.04 J
Chrysene	**16**	290	1.2	mg/kg	0.1 J	1.5	0.27 J	4.5	**51**	**36**	**20**	2.3	0.57
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.02 U	**0.48**	**0.078**	**1.4**	**7.9**	**6.3**	**3.6**	**0.49**	**0.12**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.086 J	0.036 J	0.26 J	**9.2**	3.9 J	2.1 J	0.034 J	0.025 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.2 U	0.2 U	0.1 U	0.01 U	0.01 U
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.01 U	0.21 U	0.2 U	0.1 U	0.01 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.042 J	0.043 J	0.042 J	0.095 J	0.21 U	0.21 U	0.11 U	0.019 J	0.039 J
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.018 U	0.019 U	0.018 U	0.36 U	0.36 U	0.18 U	0.018 U	0.018 U
Fluoranthene	240	3000	8.9	mg/kg	0.15 J	1.9	0.4	6.4	110	70	39	2.2	0.62
Fluorene	240	3000	0.54	mg/kg	0.0082 U	0.13 J	0.049 J	0.0078 U	20	5.8 J	3.3 J	0.063 J	0.054 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.015 U	0.015 U	0.014 U	0.29 U	0.29 U	0.14 U	0.015 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.2 U	0.2 U	0.1 U	0.01 U	0.0099 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.024 U	0.023 U	0.023 U	0.022 U	0.44 U	0.44 U	0.22 U	0.022 U	0.022 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-010	CFISS-011	CFISS-011	CFISS-012	CFISS-012	CFISS-013	CFISS-013	CFISS-014	CFISS-014
			Sample Date:	6/22/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/20/2016	6/20/2016	6/20/2016	6/20/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-010-SO-0.5-2	CFISS-011-SO-0-0.5	CFISS-011-SO-0.5-2	CFISS-012-SO-0-0.5	CFISS-012-SO-0.5-2	CFISS-013-SO-0-0.5	CFISS-013-SO-0.5-2	CFISS-014-SO-0-0.5	CFISS-014-SO-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Hexachloroethane	1.8	8	0.0002	mg/kg	0.014 U	0.013 U	0.013 U	0.013 U	0.26 U	0.26 U	0.13 U	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.066	**1.6**	**0.26**	**5.3**	**32**	**24**	**13**	**1.6**	**0.37**
Isophorone	570	2400	0.026	mg/kg	0.0081 U	0.0078 U	0.0079 U	0.0077 U	1.5 J	0.38 J	0.45 J	0.0077 U	0.0076 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0096 U	0.075 J	0.038 J	0.21 J	**5.6 J**	3 J	0.92 J	0.024 J	0.015 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.011 U	0.012 U	0.011 U	0.22 U	0.22 U	0.11 U	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.013 U	0.012 U	0.012 U	0.012 U	0.24 U	0.24 U	0.12 U	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.034 U	0.033 U	0.033 U	0.032 U	0.65 U	0.64 U	0.32 U	0.032 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.046 U	0.044 U	0.045 U	0.043 U	0.86 U	0.85 U	0.43 U	0.043 U	0.043 U
Phenanthrene	--	--	--	mg/kg	0.091 J	1.5	0.38	4.5	120	63	36	1.2	0.4
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.23 U	0.23 U	0.12 U	0.012 U	0.012 U
Pyrene	180	2300	1.3	mg/kg	0.15 J	2	0.39	6.6	88	65	37	2.3	0.71

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-015	CFISS-015	CFISS-016	CFISS-016	CFISS-017	CFISS-017	CFISS-018	CFISS-018	CFISS-019
			Sample Date:	6/18/2016	6/18/2016	6/23/2016	6/28/2016	6/23/2016	6/29/2016	6/24/2016	6/24/2016	6/24/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-015-SO-0-0.5	CFISS-015-SO-0.5-2	CFISS-016-SO-0-0.5	CFISS-016-SO-0.5-2	CFISS-017-SO-0.5-2	CFISS-017-SO-0-0.5	CFISS-018-SO-0-0.5	CFISS-018-SO-0.5-2	CFISS-019-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.032 U	0.027 U	0.027 U	0.027 U	0.057 U	0.028 U	0.028 U	0.028 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.028 U	0.024 U	0.024 U	0.023 U	0.049 U	0.025 U	0.025 U	0.024 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.098 U	0.1 U	0.085 U	0.086 U	0.084 U	0.18 U	0.089 U	0.088 U	0.087 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 U	0.013 U	0.013 U	0.013 U	0.027 U	0.014 U	0.014 U	0.013 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.035 U	0.03 U	0.03 U	0.03 U	0.062 U	0.031 U	0.031 U	0.031 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.037 U	0.032 U	0.032 U	0.031 U	0.066 U	0.033 U	0.033 U	0.032 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.011 U	0.009 U	0.0091 U	0.009 U	0.019 U	0.0094 U	0.0094 U	0.0093 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0086 U	0.0088 U	0.0075 U	0.0076 U	0.0075 U	0.016 U	0.0078 U	0.0078 U	0.0077 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.081 U	0.082 U	0.07 U	0.07 U	0.069 U	0.15 U	0.073 U	0.072 U	0.072 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.28 U	0.24 U	0.24 U	0.24 U	0.5 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.015 U	0.013 U	0.013 U	0.013 U	0.026 U	0.013 U	0.013 U	0.013 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.02 U	0.017 U	0.017 U	0.017 U	0.035 U	0.018 U	0.018 U	0.017 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0083 U	0.0085 U	0.0072 U	0.0073 U	0.0072 U	0.015 U	0.0075 U	0.0075 U	0.0074 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0093 U	0.0095 U	0.0081 U	0.0081 U	0.008 U	0.017 U	0.0084 U	0.0084 U	0.0083 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0082 J	0.014 J	0.011 J	0.015 J	0.012 J	0.018 J	0.0096 J	0.0073 U	0.04 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	0.014 U	0.014 U	0.014 U	0.029 U	0.014 U	0.014 U	0.014 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	0.01 U	0.011 U	0.01 U	0.022 U	0.011 U	0.011 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.013 U	0.011 U	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.011 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0097 U	0.0099 U	0.0085 U	0.0085 U	0.0084 U	0.018 U	0.0088 U	0.0088 U	0.0087 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.041 U	0.042 U	0.035 U	0.036 U	0.035 U	0.074 U	0.037 U	0.037 U	0.036 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	0.0094 U	0.0095 U	0.0094 U	0.02 U	0.0098 U	0.0098 U	0.0097 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.098 U	0.099 U	0.085 U	0.086 U	0.084 U	0.18 U	0.089 U	0.088 U	0.087 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.0099 U	0.021 U	0.01 U	0.01 U	0.01 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	0.014 U	0.014 U	0.014 U	0.029 U	0.014 U	0.014 U	0.014 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0094 U	0.0096 U	0.0082 U	0.0082 U	0.0081 U	0.017 U	0.0085 U	0.0085 U	0.0084 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.0095 U	0.0096 U	0.0095 U	0.02 U	0.0099 U	0.0099 U	0.0098 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	0.012 U	0.012 U	0.012 U	0.025 U	0.013 U	0.012 U	0.012 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.18 U	0.15 U	0.15 U	0.15 U	0.32 U	0.16 U	0.16 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg	0.036 J	0.009 U	0.025 J	0.036 J	0.0076 U	0.13 J	0.073 J	0.008 J	0.25 J
Acenaphthylene	--	--	--	mg/kg	0.0094 U	0.0096 U	0.0082 U	0.0082 U	0.0081 U	0.017 U	0.0085 U	0.0085 U	0.0084 U
Acetophenone	780	12000	0.058	mg/kg	0.008 U	0.0081 U	0.0069 U	0.015 J	0.0088 J	0.014 U	0.0072 U	0.0072 U	0.0071 U
Anthracene	1800	23000	5.8	mg/kg	0.035 U	0.035 U	0.049 J	0.066 J	0.03 U	0.25 J	0.13 J	0.031 U	0.44
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.017 U	0.014 U	0.014 U	0.014 U	0.03 U	0.015 U	0.015 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.03 J	0.028 U	0.024 U	0.024 U	0.024 U	0.051 U	0.025 U	0.025 U	0.025 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**1.2**	0.096	**0.32**	**0.24**	0.026 U	**1.6**	**1.1**	0.091	**2.8**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.62**	**0.11**	**0.42**	**0.23**	**0.018 J**	**2.1**	**1.3**	**0.095**	**3.4**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**6.1**	**0.26**	**0.74**	**0.38**	0.022 J	**2.7**	**2**	0.15	**4.3**
Benzo[g,h,i]perylene	--	--	--	mg/kg	1.2	0.11 J	0.43	0.25 J	0.025 J	2.2	1.9	0.097 J	4.1
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	1.2	0.089	0.24	0.14	0.015 J	0.84	0.67	0.053	1.6
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.012 U	0.0099 U	0.01 U	0.0098 U	0.021 U	0.01 U	0.01 U	0.01 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0086 U	0.0088 U	0.0075 U	0.0076 U	0.0075 U	0.016 U	0.0078 U	0.0078 U	0.0077 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.015 U	0.012 U	0.013 U	0.012 U	0.033 J	0.013 U	0.013 U	0.013 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.0098 U	0.0099 U	0.0097 U	0.02 U	0.01 U	0.01 U	0.01 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.027 U	0.023 U	0.023 U	0.023 U	0.048 U	0.024 U	0.024 U	0.023 U
Carbazole	--	--	--	mg/kg	0.08 J	0.0092 U	0.046 J	0.049 J	0.0078 U	0.26 J	0.15 J	0.012 J	0.37
Chrysene	**16**	290	1.2	mg/kg	6.2	0.18 J	0.49	0.3 J	0.022 J	2.3	1.5	0.12 J	3.4
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.56**	**0.03 J**	**0.11**	**0.068**	0.016 U	**0.59**	**0.42**	**0.027 J**	**1**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.016 J	0.011 U	0.013 J	0.03 J	0.0096 U	0.058 J	0.023 J	0.01 U	0.09 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.011 U	0.009 U	0.0091 U	0.009 U	0.019 U	0.0094 U	0.0094 U	0.0093 U
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.011 U	0.0092 U	0.0093 U	0.0092 U	0.019 U	0.0096 U	0.0096 U	0.0095 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.04 J	0.048 J	0.0095 U	0.019 J	0.0095 U	0.02 U	0.0099 U	0.0099 U	0.022 J
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.019 U	0.016 U	0.016 U	0.016 U	0.034 U	0.017 U	0.017 U	0.017 U
Fluoranthene	240	3000	8.9	mg/kg	2.3	0.17 J	0.57	0.49	0.03 J	3	1.7	0.16 J	4.5
Fluorene	240	3000	0.54	mg/kg	0.021 J	0.0081 U	0.015 J	0.031 J	0.0069 U	0.095 J	0.041 J	0.0072 U	0.15 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.015 U	0.013 U	0.013 U	0.013 U	0.027 U	0.013 U	0.013 U	0.013 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.01 U	0.0089 U	0.009 U	0.0089 U	0.019 U	0.0093 U	0.0093 U	0.0092 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.023 U	0.023 U	0.02 U	0.02 U	0.02 U	0.041 U	0.021 U	0.021 U	0.02 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-015	CFISS-015	CFISS-016	CFISS-016	CFISS-017	CFISS-017	CFISS-018	CFISS-018	CFISS-019
			Sample Date:	6/18/2016	6/18/2016	6/23/2016	6/28/2016	6/23/2016	6/29/2016	6/24/2016	6/24/2016	6/24/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-015-SO-0-0.5	CFISS-015-SO-0.5-2	CFISS-016-SO-0-0.5	CFISS-016-SO-0.5-2	CFISS-017-SO-0.5-2	CFISS-017-SO-0-0.5	CFISS-018-SO-0-0.5	CFISS-018-SO-0.5-2	CFISS-019-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.014 U	0.012 U	0.012 U	0.012 U	0.024 U	0.012 U	0.012 U	0.012 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**1.4**	0.12	**0.41**	**0.25**	0.021 U	**2.4**	**1.7**	0.1	**4**
Isophorone	570	2400	0.026	mg/kg	0.0079 U	0.008 U	0.047 J	0.0069 U	0.037 J	0.086 J	0.0071 U	0.0071 U	0.007 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.02 J	0.016 J	0.014 J	0.016 J	0.008 U	0.049 J	0.016 J	0.0084 U	0.07 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.0099 U	0.021 U	0.01 U	0.01 U	0.01 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.013 U	0.011 U	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.011 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.033 UJ	0.034 UJ	0.029 U	0.029 U	0.029 U	0.06 U	0.03 U	0.03 U	0.03 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.044 U	0.045 U	0.038 U	0.039 U	0.038 U	0.08 U	0.04 U	0.04 U	0.039 U
Phenanthrene	--	--	--	mg/kg	0.65	0.1 J	0.31 J	0.46	0.026 J	1.6	0.86	0.12 J	2.4
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U	0.01 U	0.01 U	0.01 U	0.022 U	0.011 U	0.011 U	0.011 U
Pyrene	180	2300	1.3	mg/kg	2.1	0.18 J	0.74	0.58	0.026 J	2.2	1.6	0.19 J	3.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-019	CFISS-020	CFISS-020	CFISS-020	CFISS-021	CFISS-021	CFISS-022	CFISS-022	CFISS-023
					Sample Date:	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/27/2016	6/27/2016	6/27/2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
					Sample Designation:	CFISS-019-SO-0.5-2	CFISS-020-SO-0-0.5	CFISS-DUP2-SO	CFISS-020-SO-0.5-2	CFISS-021-SO-0-0.5	CFISS-021-SO-0.5-2	CFISS-022-SO-0-0.5	CFISS-022-SO-0.5-2	CFISS-023-SO-0-0.5
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.056 U	0.31 J	0.28 U	0.27 U	0.056 U	0.027 U	0.041 J	0.028 U	0.028 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.049 U	0.25 U	0.25 U	0.24 U	0.049 U	0.023 U	0.024 U	0.025 U	0.025 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.18 U	0.88 U	0.89 U	0.85 U	0.18 U	0.084 U	0.086 U	0.089 U	0.089 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.027 U	0.14 U	0.14 U	0.13 U	0.027 U	0.013 U	0.013 U	0.014 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.062 U	0.31 U	0.31 U	0.3 U	0.062 U	0.03 U	0.03 U	0.031 U	0.031 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.066 U	0.33 U	0.33 U	0.32 U	0.066 U	0.031 U	0.032 U	0.033 U	0.033 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.019 U	0.094 U	0.094 U	0.09 U	0.019 U	0.0089 U	0.0091 U	0.0095 U	0.0095 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.016 U	0.078 U	0.078 U	0.075 U	0.016 U	0.0074 U	0.0076 U	0.0078 U	0.0079 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.15 U	0.73 U	0.73 U	0.7 U	0.15 U	0.069 U	0.071 U	0.073 U	0.073 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		0.5 U	2.5 U	2.5 U	2.4 U	0.5 U	0.24 U	0.24 U	0.25 U	0.25 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.026 U	0.13 U	0.13 U	0.13 U	0.026 U	0.012 U	0.013 U	0.013 U	0.013 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.035 U	0.18 U	0.18 U	0.17 U	0.035 U	0.017 U	0.017 U	0.018 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.015 U	0.075 U	0.075 U	0.072 U	0.015 U	0.0071 U	0.0073 U	0.0075 U	0.0076 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.017 U	0.084 U	0.084 U	0.081 U	0.017 U	0.008 U	0.0082 U	0.0085 U	0.0085 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.081 J	1.3 J	0.88 J	0.43 J	0.035 J	0.0069 U	0.16 J	0.014 J	0.0074 U
2-Methylphenol	320	4100	0.075	mg/kg		0.029 U	0.14 U	0.14 U	0.14 U	0.029 U	0.014 U	0.014 U	0.014 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg		0.022 U	0.11 U	0.11 U	0.1 U	0.022 U	0.01 U	0.011 U	0.011 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg		0.022 U	0.11 U	0.11 U	0.11 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.018 U	0.088 U	0.088 U	0.085 U	0.018 U	0.0084 U	0.011 J	0.0089 U	0.0089 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.074 U	0.37 U	0.37 U	0.35 U	0.074 U	0.035 U	0.036 U	0.037 U	0.037 U
3-Nitroaniline	--	--	--	mg/kg		0.02 U	0.098 U	0.098 U	0.094 U	0.02 U	0.0093 U	0.0095 U	0.0099 U	0.0099 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.18 U	0.88 U	0.89 U	0.85 U	0.18 U	0.084 U	0.086 U	0.089 U	0.089 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.021 U	0.1 U	0.1 U	0.1 U	0.021 U	0.0099 U	0.01 U	0.01 U	0.01 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.028 U	0.14 U	0.14 U	0.14 U	0.028 U	0.014 U	0.014 U	0.014 U	0.014 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.017 U	0.085 U	0.085 U	0.082 U	0.017 U	0.0081 U	0.0083 U	0.0086 U	0.0086 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.02 U	0.099 U	0.099 U	0.095 U	0.02 U	0.0094 U	0.0096 U	0.01 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.025 U	0.12 U	0.13 U	0.12 U	0.025 U	0.012 U	0.012 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg		0.32 U	1.6 U	1.6 U	1.5 U	0.32 U	0.15 U	0.15 U	0.16 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg		0.42 J	5.4	3.5	2.3 J	0.21 J	0.033 J	0.73	0.059 J	0.014 J
Acenaphthylene	--	--	--	mg/kg		0.017 U	0.2 J	0.14 J	0.1 J	0.017 U	0.0081 U	0.026 J	0.0086 U	0.0086 U
Acetophenone	780	12000	0.058	mg/kg		0.014 U	0.072 U	0.072 U	0.069 U	0.014 U	0.0069 U	0.0071 J	0.0073 J	0.0073 J
Anthracene	1800	23000	5.8	mg/kg		0.73	8.5	6	4.2	0.3 J	0.24 J	1.6	0.096 J	0.032 U
Atrazine	2.4	10	0.0002	mg/kg		0.029 U	0.15 U	0.15 U	0.14 U	0.029 U	0.014 U	0.014 U	0.015 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg		0.05 U	0.25 U	0.25 U	0.24 U	0.05 U	0.024 U	0.024 U	0.025 U	0.025 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		**1.9**	**23**	**17**	**12**	**2.6**	**0.27**	**11**	**0.3**	**0.25**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**2.3**	**24**	**18**	**11**	**2.9**	**0.3**	**7.7**	**0.33**	**0.36**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**2.7**	**30**	**21**	**13**	**7.5**	**0.43**	**45**	**0.65**	**0.79**
Benzo[g,h,i]perylene	--	--	--	mg/kg		1.7	21	15	6.2	4.7	0.3 J	17	0.31 J	0.44
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		0.98	**12**	**8.7**	**4.9**	**2.4**	0.14	**11**	0.2	0.25
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.021 U	0.1 U	0.1 U	0.099 U	0.021 U	0.0098 U	0.01 U	0.01 U	0.01 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.016 U	0.078 U	0.078 U	0.075 U	0.016 U	0.0074 U	0.0076 U	0.0078 U	0.0079 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		0.026 U	0.81 J	0.52 J	0.12 U	0.086 J	0.012 U	0.013 U	0.035 J	0.033 J
Butyl benzyl phthalate	290	1200	0.24	mg/kg		0.02 U	0.1 U	0.1 U	0.098 U	0.43 J	0.0099 J	0.0099 U	0.014 J	0.01 U
Caprolactam	3100	40000	0.25	mg/kg		0.048 U	0.24 U	0.24 U	0.23 U	0.048 U	0.023 U	0.023 U	0.024 U	0.024 U
Carbazole	--	--	--	mg/kg		0.39 J	4.3	3.1 J	2.4 J	0.41 J	0.13 J	1.4	0.05 J	0.032 J
Chrysene	**16**	290	1.2	mg/kg		2.4	**25**	**19**	12	5.3	0.44	**29**	0.43	0.46
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**0.54**	**6.2**	**4.7**	**2.4**	**1.6**	**0.079**	**6.8**	**0.087**	**0.11**
Dibenzofuran	**7.3**	100	0.015	mg/kg		0.23 J	2.3 J	1.5 J	1.1 J	0.071 J	0.013 J	0.3 J	0.028 J	0.01 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.019 U	0.094 U	0.094 U	0.09 U	0.019 U	0.0089 U	0.0091 U	0.0095 U	0.0095 U
Dimethyl phthalate	--	--	--	mg/kg		0.019 U	0.096 U	0.096 U	0.092 U	0.019 U	0.0091 U	0.0093 U	0.0097 U	0.0097 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.02 U	0.099 U	0.099 U	0.095 U	0.02 U	0.0094 U	0.035 J	0.01 U	0.015 J
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.034 U	0.17 U	0.17 U	0.16 U	0.034 U	0.016 U	0.016 U	0.017 U	0.017 U
Fluoranthene	240	3000	8.9	mg/kg		3.3	39	30	22	4.5	0.49	13	0.59	0.41
Fluorene	240	3000	0.54	mg/kg		0.34 J	4.1	2.7 J	1.7 J	0.14 J	0.031 J	0.52	0.056 J	0.01 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.027 U	0.13 U	0.13 U	0.13 U	0.027 U	0.013 U	0.013 U	0.013 U	0.013 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.019 U	0.093 U	0.093 U	0.089 U	0.019 U	0.0088 U	0.009 U	0.0094 U	0.0094 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.041 U	0.21 U	0.21 U	0.2 U	0.041 U	0.02 U	0.02 U	0.021 U	0.021 U

Preliminary - Under EPA and MEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-019	CFISS-020	CFISS-020	CFISS-020	CFISS-021	CFISS-021	CFISS-022	CFISS-022	CFISS-023
			Sample Date:	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/27/2016	6/27/2016	6/27/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-019-SO-0.5-2	CFISS-020-SO-0-0.5	CFISS-DUP2-SO	CFISS-020-SO-0.5-2	CFISS-021-SO-0-0.5	CFISS-021-SO-0.5-2	CFISS-022-SO-0-0.5	CFISS-022-SO-0.5-2	CFISS-023-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Hexachloroethane	1.8	8	0.0002	mg/kg	0.024 U	0.12 U	0.12 U	0.12 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**2**	**22**	**17**	**8**	**4.8**	**0.36**	**17**	**0.33**	**0.44**
Isophorone	570	2400	0.026	mg/kg	0.014 U	0.071 U	0.071 U	0.068 U	0.014 U	0.011 J	0.024 J	0.0071 U	0.0072 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.18 J	2.2 J	1.2 J	0.87 J	0.07 J	0.01 J	0.36	0.024 J	0.0085 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.021 U	0.1 U	0.1 U	0.1 U	0.021 U	0.0099 U	0.01 U	0.01 U	0.01 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.022 U	0.11 U	0.11 U	0.11 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.06 U	0.3 U	0.3 U	0.29 U	0.06 U	0.029 U	0.029 U	0.03 U	0.03 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.08 U	0.4 U	0.4 U	0.38 U	0.08 U	0.038 U	0.039 U	0.04 U	0.04 U
Phenanthrene	--	--	--	mg/kg	2.8	32	24	17	2.1	0.31	6.6	0.46	0.18 J
Phenol	1900	25000	0.33	mg/kg	0.022 U	0.11 U	0.11 U	0.1 U	0.022 U	0.01 U	0.018 J	0.011 U	0.011 U
Pyrene	180	2300	1.3	mg/kg	2.6	40	28	15	4.6	0.5	16	0.74	0.58

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-023	CFISS-024	CFISS-024	CFISS-025	CFISS-025	CFISS-026	CFISS-026	CFISS-027	CFISS-027
			Sample Date:	6/27/2016	6/29/2016	6/29/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	7/1/2016	7/1/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5
			Sample Designation:	CFISS-023-SO-0.5-2	CFISS-024-SO-0-0.5	CFISS-024-SO-0.5-2	CFISS-025-SO-0-0.5	CFISS-025-SO-0.5-2	CFISS-026-SO-0-0.5	CFISS-026-SO-0.5-2	CFISS-027-SO-0-0.5	CFISS-DUP3-SO
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.027 U	0.055 U	0.057 U	0.057 U	0.028 U	0.058 J	0.027 U	0.14 U	0.14 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.024 U	0.048 U	0.05 U	0.049 U	0.024 U	0.049 U	0.024 U	0.12 U	0.13 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.085 U	0.17 U	0.18 U	0.18 U	0.087 U	0.18 U	0.085 U	0.43 U	0.45 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.013 U	0.027 U	0.027 U	0.027 U	0.013 U	0.027 U	0.013 U	0.067 U	0.069 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.03 U	0.061 U	0.063 U	0.062 U	0.03 U	0.062 U	0.03 U	0.15 U	0.16 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.032 U	0.064 U	0.066 U	0.066 U	0.032 U	0.066 U	0.032 U	0.16 U	0.17 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.009 U	0.018 U	0.019 U	0.019 U	0.0092 U	0.019 U	0.0091 U	0.046 U	0.048 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0075 U	0.015 U	0.016 U	0.016 U	0.0076 U	0.016 U	0.0075 U	0.038 U	0.04 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.07 U	0.14 U	0.15 U	0.15 U	0.071 U	0.15 U	0.07 U	0.36 U	0.37 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.24 U	0.49 U	0.5 U	0.5 U	0.24 U	0.5 U	0.24 U	1.2 U	1.3 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.013 U	0.026 U	0.026 U	0.026 U	0.013 U	0.026 U	0.013 U	0.064 U	0.067 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.017 U	0.034 U	0.035 U	0.035 U	0.017 U	0.035 U	0.017 U	0.086 U	0.09 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0072 U	0.015 U	0.015 U	0.015 U	0.0073 U	0.015 U	0.0072 U	0.037 U	0.038 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.008 U	0.016 U	0.017 U	0.017 U	0.0082 U	0.017 U	0.0081 U	0.041 U	0.043 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0074 J	0.052 J	0.037 J	0.033 J	0.017 J	0.17 J	0.019 J	0.079 J	0.091 J
2-Methylphenol	320	4100	0.075	mg/kg	0.014 U	0.028 U	0.029 U	0.029 U	0.014 U	0.029 U	0.014 U	0.071 U	0.073 U
2-Nitroaniline	63	800	0.008	mg/kg	0.01 U	0.021 U	0.022 U	0.022 U	0.011 U	0.022 U	0.011 U	0.053 U	0.055 U
2-Nitrophenol	--	--	--	mg/kg	0.011 U	0.022 U	0.022 U	0.022 U	0.011 U	0.022 U	0.011 U	0.054 U	0.056 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0084 U	0.017 U	0.018 U	0.018 U	0.0086 U	0.018 U	0.0085 U	0.043 U	0.045 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.035 U	0.072 U	0.074 U	0.074 U	0.036 U	0.074 U	0.036 U	0.18 U	0.19 U
3-Nitroaniline	--	--	--	mg/kg	0.0094 U	0.019 U	0.02 U	0.02 U	0.0096 U	0.02 U	0.0095 U	0.048 U	0.05 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.085 U	0.17 U	0.18 U	0.18 U	0.086 U	0.18 U	0.085 U	0.43 U	0.45 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.02 U	0.021 U	0.021 U	0.01 U	0.021 U	0.01 U	0.051 U	0.053 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.014 U	0.028 U	0.029 U	0.029 U	0.014 U	0.028 U	0.014 U	0.07 U	0.072 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0081 U	0.017 U	0.017 U	0.017 U	0.0083 U	0.017 U	0.0082 U	0.042 U	0.043 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.0095 U	0.019 U	0.02 U	0.02 U	0.0097 U	0.02 U	0.0096 U	0.048 U	0.05 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.012 U	0.024 U	0.025 U	0.025 U	0.012 U	0.025 U	0.012 U	0.061 U	0.064 U
4-Nitrophenol	--	--	--	mg/kg	0.15 U	0.31 U	0.32 U	0.32 U	0.16 U	0.32 U	0.15 U	0.78 U	0.81 U
Acenaphthene	360	4500	0.55	mg/kg	0.019 J	0.35 J	0.31 J	0.21 J	0.1 J	0.41 J	0.077 J	0.13 J	0.21 J
Acenaphthylene	--	--	--	mg/kg	0.0081 U	0.017 U	0.017 U	0.017 U	0.0083 U	0.017 U	0.0082 U	0.042 U	0.043 U
Acetophenone	780	12000	0.058	mg/kg	0.0069 U	0.014 U	0.015 U	0.02 J	0.012 J	0.023 J	0.017 J	0.035 U	0.037 U
Anthracene	1800	23000	5.8	mg/kg	0.033 J	0.57 J	0.53 J	0.4 J	0.19 J	0.58 J	0.16 J	0.27 J	0.4 J
Atrazine	2.4	10	0.0002	mg/kg	0.014 U	0.029 U	0.03 U	0.03 U	0.014 U	0.029 U	0.014 U	0.072 U	0.075 U
Benzaldehyde	170	820	0.0041	mg/kg	0.024 U	0.049 U	0.051 U	0.051 J	0.025 U	0.05 U	0.024 U	0.12 U	0.13 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.12	**2.9**	**2.4**	**2.4**	**0.87**	**1.7**	**1**	**2.7**	**3.2**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.12**	**3.5**	**3.1**	**3.1**	**1.1**	**1.8**	**1.3**	**2**	**2.7**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.16	**4.9**	**3.4**	**4.6**	**1.4**	**4**	**1.7**	**12**	**13**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.15 J	3.8	2.9	4.9	1.4	2.7	1.3	6.1	6.7
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.077	1.5	1.2	**1.8**	0.5	1.2	0.6	**3.1**	**3**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.0099 U	0.02 U	0.021 U	0.021 U	0.01 U	0.021 U	0.0099 U	0.05 U	0.052 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0075 U	0.015 U	0.016 U	0.016 U	0.0076 U	0.016 U	0.0075 U	0.038 U	0.04 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 J	0.025 U	0.026 U	0.047 J	0.013 U	0.055 J	0.012 U	0.27 J	0.066 UJ
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.0098 U	0.02 U	0.021 U	0.046 J	0.01 U	0.02 U	0.0098 U	0.05 U	0.052 U
Caprolactam	3100	40000	0.25	mg/kg	0.023 U	0.047 U	0.048 U	0.048 U	0.023 U	0.048 U	0.023 U	0.12 U	0.12 U
Carbazole	--	--	--	mg/kg	0.018 J	0.43 J	0.45 J	0.35 J	0.15 J	0.34 J	0.13 J	0.25 J	0.36 J
Chrysene	**16**	290	1.2	mg/kg	0.14 J	4	3.1	3.6	1.2	2.9	1.3	6.1	6.7
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.016 U	**1**	**0.69**	**1.2**	**0.32**	**0.86**	**0.38**	**2.4**	**2.6**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 J	0.14 J	0.089 J	0.066 J	0.035 J	0.26 J	0.035 J	0.088 J	0.12 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.009 U	0.018 U	0.019 U	0.019 U	0.0092 U	0.019 U	0.0091 U	0.046 U	0.048 U
Dimethyl phthalate	--	--	--	mg/kg	0.0092 U	0.019 U	0.019 U	0.019 U	0.0094 U	0.019 U	0.0093 U	0.047 U	0.049 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 J	0.019 U	0.02 U	0.02 U	0.0097 U	0.021 J	0.0096 U	0.048 U	0.05 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.016 U	0.033 U	0.034 U	0.034 U	0.016 U	0.034 U	0.016 U	0.082 U	0.085 U
Fluoranthene	240	3000	8.9	mg/kg	0.19 J	5.1	4.4	4	1.8	3	1.6	3.2	4.1
Fluorene	240	3000	0.54	mg/kg	0.02 J	0.22 J	0.2 J	0.13 J	0.068 J	0.39 J	0.064 J	0.1 J	0.16 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.013 U	0.026 U	0.027 U	0.027 U	0.013 U	0.027 U	0.013 U	0.066 U	0.068 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0089 U	0.018 U	0.019 U	0.019 U	0.0091 U	0.019 U	0.009 U	0.046 U	0.047 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.02 U	0.04 U	0.042 U	0.041 U	0.02 U	0.041 U	0.02 U	0.1 U	0.1 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-023	CFISS-024	CFISS-024	CFISS-025	CFISS-025	CFISS-026	CFISS-026	CFISS-027	CFISS-027
			Sample Date:	6/27/2016	6/29/2016	6/29/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	7/1/2016	7/1/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5
			Sample Designation:	CFISS-023-SO-0.5-2	CFISS-024-SO-0-0.5	CFISS-024-SO-0.5-2	CFISS-025-SO-0-0.5	CFISS-025-SO-0.5-2	CFISS-026-SO-0-0.5	CFISS-026-SO-0.5-2	CFISS-027-SO-0-0.5	CFISS-DUP3-SO
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Hexachloroethane	1.8	8	0.0002	mg/kg	0.012 U	0.024 U	0.024 U	0.024 U	0.012 U	0.024 U	0.012 U	0.059 U	0.062 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.12	**4**	**3**	**4.5**	**1.4**	**3**	**1.4**	**6.7**	**7.3**
Isophorone	570	2400	0.026	mg/kg	0.0068 U	0.076 J	0.014 U	0.014 U	0.007 U	0.014 U	0.1 J	0.035 U	0.036 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.014 J	0.11 J	0.06 J	0.054 J	0.027 J	0.64 J	0.046 J	0.052 J	0.088 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.01 U	0.02 U	0.021 U	0.021 U	0.01 U	0.021 U	0.01 U	0.051 U	0.053 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.011 U	0.022 U	0.022 U	0.022 U	0.011 U	0.022 U	0.011 U	0.054 U	0.056 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.029 U	0.059 U	0.06 U	0.06 U	0.029 U	0.06 U	0.029 U	0.15 U	0.15 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.038 U	0.078 U	0.081 U	0.08 U	0.039 U	0.08 U	0.039 U	0.2 U	0.2 U
Phenanthrene	--	--	--	mg/kg	0.18 J	2.7	2.7	2.1	1	2.6	0.82	1.5 J	2.2
Phenol	1900	25000	0.33	mg/kg	0.01 U	0.021 U	0.022 U	0.022 U	0.011 U	0.022 U	0.01 U	0.053 U	0.055 U
Pyrene	180	2300	1.3	mg/kg	0.26 J	3.5	3.8	3.8	1.4	2.7	1.3	2.7	3.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-027	CFISS-028	CFISS-028	CFISS-029	CFISS-029	CFISS-030	CFISS-030	CFISS-031	CFISS-031
			Sample Date:	7/1/2016	7/1/2016	7/1/2016	6/27/2016	6/27/2016	7/25/2016	7/25/2016	7/13/2016	7/13/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-027-SO-0.5-2	CFISS-028-SO-0-0.5	CFISS-028-SO-0.5-2	CFISS-029-SO-0-0.5	CFISS-029-SO-0.5-2	CFISS-030-SO-0-0.5	CFISS-030-SO-0.5-2	CFISS-031-S0-0-0.5	CFISS-031-S0-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.027 U	0.028 U	0.027 U	0.028 U	0.028 U	0.055 U	0.027 U	0.028 U	0.058 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.048 U	0.024 U	0.024 U	0.05 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.085 U	0.087 U	0.086 U	0.087 U	0.087 U	0.17 U	0.085 U	0.088 U	0.18 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.026 U	0.013 U	0.014 U	0.028 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.03 UJ	0.03 U	0.03 U	0.031 U	0.031 U	0.061 U	0.03 U	0.031 U	0.064 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.064 U	0.032 U	0.033 U	0.067 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.009 U	0.0092 U	0.0091 U	0.0093 U	0.0092 U	0.018 U	0.0091 U	0.0094 U	0.019 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0075 U	0.0076 U	0.0076 U	0.0077 U	0.0077 U	0.015 U	0.0075 U	0.0078 U	0.016 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.07 U	0.071 U	0.071 U	0.072 U	0.071 U	0.14 U	0.07 U	0.072 U	0.15 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.24 R	0.24 U	0.24 U	0.25 U	0.25 U	0.49 U	0.24 U	0.25 UJ	0.51 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.025 U	0.013 U	0.013 U	0.027 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.034 U	0.017 U	0.018 U	0.036 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0072 U	0.0073 U	0.0073 U	0.0074 U	0.0074 U	0.015 U	0.0072 U	0.0075 U	0.015 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0081 U	0.0082 U	0.0082 U	0.0083 U	0.0083 U	0.016 U	0.0081 U	0.0084 U	0.017 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.054 J	0.011 J	0.017 J	0.0075 J	0.0072 U	0.031 J	0.0098 J	0.011 J	0.015 U
2-Methylphenol	320	4100	0.075	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.028 U	0.014 U	0.014 U	0.03 U
2-Nitroaniline	63	800	0.008	mg/kg	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	0.021 U	0.011 U	0.011 U	0.022 U
2-Nitrophenol	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.023 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0084 U	0.0086 U	0.0085 U	0.0087 U	0.0086 U	0.017 U	0.0085 U	0.0088 U	0.018 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.035 U	0.036 U	0.036 U	0.036 U	0.036 U	0.072 U	0.036 U	0.037 U	0.076 U
3-Nitroaniline	--	--	--	mg/kg	0.0094 U	0.0096 U	0.0095 U	0.0097 U	0.0096 U	0.019 U	0.0094 U	0.0098 U	0.02 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.085 UJ	0.086 U	0.086 U	0.087 U	0.087 U	0.17 U	0.085 U	0.088 U	0.18 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.021 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.028 U	0.014 U	0.014 U	0.029 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0082 U	0.0083 U	0.0083 U	0.0084 U	0.0084 U	0.017 U	0.0082 U	0.0085 U	0.017 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.0095 U	0.0097 U	0.0096 U	0.0098 U	0.0097 U	0.019 U	0.0095 U	0.0099 U	0.02 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.024 U	0.012 U	0.012 U	0.026 U
4-Nitrophenol	--	--	--	mg/kg	0.15 U	0.16 U	0.15 U	0.16 U	0.16 U	0.31 U	0.15 U	0.16 U	0.33 U
Acenaphthene	360	4500	0.55	mg/kg	0.29 J	0.035 J	0.095 J	0.039 J	0.014 J	0.28 J	0.05 J	0.04 J	0.04 J
Acenaphthylene	--	--	--	mg/kg	0.0082 U	0.0083 U	0.0083 U	0.0084 U	0.0084 U	0.017 U	0.0082 U	0.0085 U	0.017 U
Acetophenone	780	12000	0.058	mg/kg	0.02 J	0.03 J	0.021 J	0.02 J	0.015 J	0.014 U	0.0069 U	0.0072 U	0.015 U
Anthracene	1800	23000	5.8	mg/kg	0.58	0.079 J	0.23 J	0.079 J	0.031 U	0.66	0.1 J	0.13 J	0.12 J
Atrazine	2.4	10	0.0002	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.029 U	0.014 U	0.015 U	0.03 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 J-	0.038 J	0.032 J	0.025 U	0.025 U	0.049 U	0.024 U	0.025 U	0.052 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**3**	**0.47**	**1.5**	**0.67**	0.14	**4.5**	**0.64**	**0.6**	**0.57**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**3.9**	**0.61**	**1.8**	**0.85**	**0.17**	**5.5**	**0.88**	**0.59**	**0.57**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**4.9**	**0.96**	**2.3**	**1.4**	**0.24**	**6.5**	**1.2**	**1**	**1**
Benzo[g,h,i]perylene	--	--	--	mg/kg	4.2	0.72	1.7	1.1	0.18 J	7.2	0.86	0.75 J+	0.64 J+
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**1.7 J-**	0.35	0.79	0.53	0.095	**2.4**	0.38	0.31	0.35
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.0099 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.0099 U	0.01 U	0.021 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0075 U	0.0076 U	0.0076 U	0.0077 U	0.0077 U	0.015 U	0.0075 U	0.0078 U	0.016 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.074 J	0.013 U	0.046 J	0.1 J	0.049 J	0.058 J	0.012 U	0.013 U	0.026 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.0098 U	0.01 U	0.012 J	0.01 U	0.01 U	0.048 J	0.0098 U	0.01 U	0.021 U
Caprolactam	3100	40000	0.25	mg/kg	0.023 UJ	0.023 U	0.023 U	0.023 U	0.023 U	0.046 U	0.023 U	0.024 U	0.049 U
Carbazole	--	--	--	mg/kg	0.48	0.079 J	0.22 J	0.08 J	0.025 J	0.52 J	0.087 J	0.13 J	0.13 J
Chrysene	**16**	290	1.2	mg/kg	4.3	0.74	2	0.95	0.17 J	5.6	0.84	0.98	0.92
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**1.1**	**0.19**	**0.46**	**0.25**	**0.055**	**1.8**	**0.19**	**0.19 J+**	**0.13 J+**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.11 J	0.017 J	0.041 J	0.015 J	0.0098 U	0.085 J	0.021 J	0.036 J	0.035 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.009 U	0.0092 U	0.0091 U	0.0093 U	0.0092 U	0.018 U	0.0091 U	0.0094 U	0.019 U
Dimethyl phthalate	--	--	--	mg/kg	0.0092 U	0.0094 U	0.0093 U	0.0095 U	0.0094 U	0.019 U	0.0093 U	0.0096 U	0.02 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.0095 U	0.012 J	0.019 J	0.067 J	0.023 J	0.019 U	0.0095 U	0.0099 U	0.02 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.016 U	0.016 U	0.016 U	0.017 U	0.017 U	0.033 U	0.016 U	0.017 U	0.034 U
Fluoranthene	240	3000	8.9	mg/kg	5.4	0.88	2.7	0.96	0.22 J	6.6	1	1.6	1.4
Fluorene	240	3000	0.54	mg/kg	0.22 J	0.028 J	0.078 J	0.027 J	0.012 J	0.17 J	0.039 J	0.038 J	0.035 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.026 U	0.013 U	0.013 U	0.027 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0089 U	0.0091 U	0.009 U	0.0092 U	0.0091 U	0.018 U	0.009 U	0.0093 U	0.019 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 U	0.04 U	0.02 U	0.021 U	0.042 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-027	CFISS-028	CFISS-028	CFISS-029	CFISS-029	CFISS-030	CFISS-030	CFISS-031	CFISS-031
			Sample Date:	7/1/2016	7/1/2016	7/1/2016	6/27/2016	6/27/2016	7/25/2016	7/25/2016	7/13/2016	7/13/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-027-SO-0.5-2	CFISS-028-SO-0-0.5	CFISS-028-SO-0.5-2	CFISS-029-SO-0-0.5	CFISS-029-SO-0.5-2	CFISS-030-SO-0-0.5	CFISS-030-SO-0.5-2	CFISS-031-S0-0-0.5	CFISS-031-S0-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Hexachloroethane	1.8	8	0.0002	mg/kg	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.024 U	0.012 U	0.012 U	0.025 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**3.9**	**0.82**	**1.8**	**1.1**	**0.18**	**6.9**	**0.88**	**0.71 J+**	**0.57 J+**
Isophorone	570	2400	0.026	mg/kg	0.11 J	0.099 J	0.0069 U	0.007 U	0.007 U	0.014 U	0.0068 U	0.0071 U	0.015 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.079 J	0.019 J	0.033 J	0.012 J	0.0083 U	0.063 J	0.02 J	0.018 J	0.018 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.021 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U	0.011 U	0.011 U	0.023 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.029 U	0.029 U	0.029 U	0.03 U	0.029 U	0.058 U	0.029 U	0.03 U	0.061 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.038 UJ	0.039 U	0.039 U	0.039 U	0.039 U	0.078 U	0.039 U	0.04 U	0.082 U
Phenanthrene	--	--	--	mg/kg	2.7	0.41	1.3	0.47	0.14 J	3.1	0.56	1	0.99
Phenol	1900	25000	0.33	mg/kg	0.017 J	0.015 J	0.014 J	0.012 J	0.011 U	0.021 U	0.01 U	0.011 U	0.022 U
Pyrene	180	2300	1.3	mg/kg	4.6	0.65	2.1	1.3	0.28 J	7.1	1.2	1.1	1.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-032	CFISS-032	CFISS-033	CFISS-033	CFISS-034	CFISS-034	CFISS-035	CFISS-035	CFISS-036
			Sample Date:	7/12/2016	7/12/2016	7/12/2016	7/12/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/15/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-032-SO-0-0.5	CFISS-032-SO-0.5-2	CFISS-033-SO-0-0.5	CFISS-033-SO-0.5-2	CFISS-034-SO-0-0.5	CFISS-034-SO-0.5-2	CFISS-035-SO-0-0.5	CFISS-035-SO-0.5-2	CFISS-036-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.028 U	0.028 U	0.57 U	0.028 U	0.7 U	0.028 U	0.14 U	0.028 U	0.029 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.025 U	0.024 U	0.5 U	0.024 U	0.61 U	0.024 U	0.12 U	0.025 U	0.025 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.088 U	0.087 U	1.8 U	0.088 U	2.2 U	0.086 U	0.45 U	0.089 U	0.09 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.013 U	0.28 U	0.013 U	0.34 U	0.013 U	0.069 U	0.014 U	0.014 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.031 U	0.031 U	0.63 U	0.031 U	0.77 U	0.03 U	0.16 U	0.031 U	0.032 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.033 U	0.032 U	0.67 U	0.033 U	0.81 U	0.032 U	0.17 U	0.033 U	0.033 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0094 U	0.0093 U	0.19 U	0.0093 U	0.23 U	0.0092 U	0.047 U	0.0095 U	0.0095 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0078 U	0.0077 U	0.16 U	0.0077 U	0.19 U	0.0076 U	0.039 U	0.0079 U	0.0079 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.073 U	0.072 U	1.5 U	0.072 U	1.8 U	0.071 U	0.37 U	0.073 U	0.074 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.25 UJ	0.25 UJ	5.1 UJ	0.25 U	6.2 UJ	0.24 U	1.3 U	0.25 UJ	0.25 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.013 U	0.013 U	0.27 U	0.013 U	0.32 U	0.013 U	0.066 U	0.013 U	0.013 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.017 U	0.36 U	0.017 U	0.43 U	0.017 U	0.089 U	0.018 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0075 U	0.0074 U	0.15 U	0.0074 U	0.18 U	0.0073 U	0.038 U	0.0075 U	0.0076 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0084 U	0.0083 U	0.17 U	0.0083 U	0.21 U	0.0082 U	0.042 U	0.0085 U	0.0085 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.013 J	0.012 J	0.15 U	0.0072 U	0.18 U	0.0086 J	0.037 U	0.0073 U	0.09 J
2-Methylphenol	320	4100	0.075	mg/kg	0.014 U	0.014 U	0.29 U	0.014 U	0.36 U	0.014 U	0.073 U	0.014 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.22 U	0.011 U	0.27 U	0.011 U	0.055 U	0.011 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.011 U	0.011 U	0.23 U	0.011 U	0.27 U	0.011 U	0.056 U	0.011 U	0.011 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0088 U	0.0087 U	0.18 U	0.0087 U	0.22 U	0.0086 U	0.044 U	0.0089 U	0.0089 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.037 U	0.036 U	0.75 U	0.037 U	0.91 U	0.036 U	0.19 U	0.037 U	0.037 U
3-Nitroaniline	--	--	--	mg/kg	0.0098 U	0.0097 U	0.2 U	0.0097 U	0.24 U	0.0096 U	0.049 U	0.0099 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.088 U	0.087 U	1.8 U	0.087 U	2.2 U	0.086 U	0.45 U	0.089 U	0.09 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.01 U	0.21 U	0.01 U	0.26 U	0.01 U	0.053 U	0.01 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.014 U	0.014 U	0.29 U	0.014 U	0.35 U	0.014 U	0.072 U	0.014 U	0.014 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0085 U	0.0084 U	0.17 U	0.0084 U	0.21 U	0.0083 U	0.043 U	0.0086 U	0.0086 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.0099 U	0.0098 U	0.2 U	0.0098 U	0.24 U	0.0097 U	0.05 U	0.01 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.012 U	0.012 U	0.25 U	0.012 U	0.31 U	0.012 U	0.063 U	0.013 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg	0.16 U	0.16 U	3.2 U	0.16 U	3.9 U	0.16 U	0.8 U	0.16 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg	0.12 J	0.067 J	1.5 J	0.12 J	4.6 J	0.043 J	0.7 J	0.018 J	0.26 J
Acenaphthylene	--	--	--	mg/kg	0.0085 U	0.0084 U	0.17 U	0.0084 U	0.21 U	0.0083 U	0.043 U	0.0086 U	0.01 J
Acetophenone	780	12000	0.058	mg/kg	0.0072 U	0.0071 U	0.15 U	0.0071 U	0.18 U	0.007 U	0.036 U	0.0072 U	0.0073 U
Anthracene	1800	23000	5.8	mg/kg	0.25 J	0.17 J	4.6 J	0.36	15	0.12 J	3.9	0.051 J	0.41
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.015 U	0.3 U	0.015 U	0.36 U	0.014 U	0.074 U	0.015 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.025 U	0.025 U	0.51 U	0.025 U	0.62 U	0.025 U	0.13 U	0.025 U	0.026 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**1.6**	**1.1**	**37**	**2.6**	**100**	**0.71**	**18**	**0.32**	**0.95**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**1.9**	**1.2**	**44**	**3.3**	**110**	**0.89**	**21**	**0.4**	**1.1**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**2.3**	**1.3**	**50**	**3.5**	**130**	**1.1**	**23**	**0.48**	**1.8**
Benzo[g,h,i]perylene	--	--	--	mg/kg	1.6 J-	0.98 J-	37 J-	2.9 J-	90 J-	0.83 J-	18 J-	0.35 J-	0.78
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.88	0.61	**21**	1.5	**47**	0.42	**8.9**	0.23	0.68
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.01 U	0.01 U	0.21 U	0.01 U	0.25 U	0.01 U	0.052 U	0.01 U	0.01 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0078 U	0.0077 U	0.16 U	0.0077 U	0.19 U	0.0076 U	0.039 U	0.0079 U	0.0079 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.013 U	0.013 U	0.26 U	0.013 U	0.32 U	0.013 U	0.065 U	0.013 U	0.013 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.01 U	0.01 U	0.59 J	0.01 U	0.25 U	0.01 U	0.052 U	0.01 U	0.01 U
Caprolactam	3100	40000	0.25	mg/kg	0.024 U	0.023 U	0.48 U	0.024 U	0.59 U	0.023 U	0.12 U	0.024 U	0.024 U
Carbazole	--	--	--	mg/kg	0.23 J	0.13 J	3.2 J	0.23 J	11	0.091 J	1.9	0.037 J	0.21 J
Chrysene	**16**	290	1.2	mg/kg	2	1.2	**39**	2.8	**100**	0.91	**18**	0.37	1.6
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.44 J-**	**0.27 J-**	**9.1 J-**	**0.74 J-**	**26 J-**	**0.23 J-**	**4.9 J-**	**0.096 J-**	**0.24**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.037 J	0.027 J	0.23 J	0.018 J	0.59 J	0.018 J	0.1 J	0.01 U	0.15 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0094 U	0.0093 U	0.19 U	0.0093 U	0.23 U	0.0092 U	0.047 U	0.0095 U	0.0095 U
Dimethyl phthalate	--	--	--	mg/kg	0.0096 U	0.0095 U	0.2 U	0.0095 U	0.24 U	0.0094 U	0.048 U	0.0097 U	0.0098 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.018 J	0.023 J	0.2 U	0.025 J	0.24 U	0.025 J	0.05 U	0.021 J	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.017 U	0.017 U	0.34 U	0.017 U	0.41 U	0.016 U	0.085 U	0.017 U	0.017 U
Fluoranthene	240	3000	8.9	mg/kg	2.3	1.2	42	2.7	120	0.91	22	0.41	2.2
Fluorene	240	3000	0.54	mg/kg	0.079 J-	0.048 J-	0.67 J-	0.045 J-	1.8 J-	0.035 J-	0.29 J-	0.0095 J-	0.26 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.013 U	0.013 U	0.27 U	0.013 U	0.33 U	0.013 U	0.068 U	0.013 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0093 U	0.0092 U	0.19 U	0.0092 U	0.23 U	0.0091 U	0.047 U	0.0094 U	0.0094 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.021 U	0.02 U	0.42 U	0.02 U	0.51 U	0.02 U	0.1 U	0.021 U	0.021 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-032	CFISS-032	CFISS-033	CFISS-033	CFISS-034	CFISS-034	CFISS-035	CFISS-035	CFISS-036
			Sample Date:	7/12/2016	7/12/2016	7/12/2016	7/12/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/15/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-032-SO-0-0.5	CFISS-032-SO-0.5-2	CFISS-033-SO-0-0.5	CFISS-033-SO-0.5-2	CFISS-034-SO-0-0.5	CFISS-034-SO-0.5-2	CFISS-035-SO-0-0.5	CFISS-035-SO-0.5-2	CFISS-036-SO-0-0.5
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Hexachloroethane	1.8	8	0.0002	mg/kg	0.012 U	0.012 U	0.25 U	0.012 U	0.3 U	0.012 U	0.061 U	0.012 U	0.012 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**1.7 J-**	**1 J-**	**40 J-**	**3 J-**	**100 J-**	**0.83 J-**	**19 J-**	**0.33 J-**	**0.86**
Isophorone	570	2400	0.026	mg/kg	0.0071 U	0.007 U	0.14 U	0.007 U	0.18 U	0.0069 U	0.036 U	0.0071 U	0.0072 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.018 J	0.035 J	0.17 U	0.0083 U	0.21 U	0.016 J	0.042 U	0.0085 U	0.31 J
Nitrobenzene	5.1	22	0.000092	mg/kg	0.01 U	0.01 U	0.21 U	0.01 U	0.26 U	0.01 U	0.053 U	0.01 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.011 U	0.011 U	0.23 U	0.011 U	0.27 U	0.011 U	0.056 U	0.011 U	0.011 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.03 U	0.03 U	0.61 U	0.03 U	0.74 U	0.029 U	0.15 U	0.03 U	0.03 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.04 U	0.039 U	0.81 U	0.04 U	0.99 U	0.039 U	0.2 U	0.04 U	0.1 J
Phenanthrene	--	--	--	mg/kg	1.5	0.78	18	1.3	52	0.61	8.8	0.22 J	1.7
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.011 U	0.22 U	0.011 U	0.27 U	0.011 U	0.055 U	0.011 U	0.011 U
Pyrene	180	2300	1.3	mg/kg	2.9	1.7	48	3.2	120	1.3	21	0.54	1.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-036	CFISS-037	CFISS-037	CFISS-038	CFISS-038	CFISS-039	CFISS-039	CFISS-040	CFISS-040
			Sample Date:	7/15/2016	7/15/2016	7/15/2016	7/14/2016	7/14/2016	7/14/2016	7/14/2016	7/13/2016	7/13/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-036-SO-0.5-2	CFISS-037-SO-0-0.5	CFISS-037-SO-0.5-2	CFISS-038-S0-0-0.5	CFISS-038-S0-0.5-2	CFISS-039-S0-0-0.5	CFISS-039-S0-0.5-2	CFISS-040-S0-0-0.5	CFISS-040-S0-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.055 U	0.28 U	0.037 J
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.025 U	0.025 U	0.024 U	0.025 U	0.024 U	0.048 U	0.25 U	0.024 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.095 U	0.088 U	0.089 U	0.088 U	0.089 U	0.087 U	0.17 U	0.89 U	0.087 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 UJ	0.014 UJ	0.014 U	0.013 U	0.014 U	0.013 U	0.026 U	0.14 U	0.013 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.06 U	0.31 U	0.031 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.033 U	0.033 U	0.033 U	0.033 U	0.032 U	0.064 U	0.33 U	0.032 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.0094 U	0.0095 U	0.0093 U	0.0095 U	0.0092 U	0.018 U	0.094 U	0.0092 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0084 U	0.0078 U	0.0079 U	0.0077 U	0.0079 U	0.0077 U	0.015 U	0.078 U	0.0077 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.079 U	0.073 U	0.073 U	0.072 U	0.073 U	0.071 U	0.14 U	0.73 U	0.072 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.27 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	0.25 UJ	0.48 U	2.5 U	0.25 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.025 U	0.13 U	0.013 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.018 U	0.018 U	0.017 U	0.018 U	0.017 U	0.034 U	0.18 U	0.017 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0081 U	0.0075 U	0.0076 U	0.0074 U	0.0076 U	0.0074 U	0.015 U	0.075 U	0.0074 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0091 U	0.0084 U	0.0085 U	0.0083 U	0.0085 U	0.0083 U	0.016 U	0.084 U	0.0083 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0079 U	0.078 J	0.011 J	0.044 J	0.097 J	0.0092 J	0.08 J	0.46 J	0.096 J
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.014 U	0.015 U	0.014 U	0.015 U	0.014 U	0.028 U	0.14 U	0.014 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.021 U	0.11 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.021 U	0.11 U	0.011 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0095 U	0.0088 U	0.0089 U	0.0087 U	0.017 J	0.0087 U	0.017 U	0.088 U	0.0087 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.04 U	0.037 U	0.037 U	0.037 U	0.037 U	0.036 U	0.071 U	0.37 U	0.036 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.0098 U	0.0099 U	0.0097 U	0.0099 U	0.0096 U	0.019 U	0.098 U	0.0096 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.095 U	0.088 U	0.089 U	0.088 U	0.089 U	0.087 U	0.17 U	0.88 U	0.087 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.1 U	0.01 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.027 U	0.14 U	0.014 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0092 U	0.0085 U	0.0086 U	0.0084 U	0.0086 U	0.0084 U	0.016 U	0.085 U	0.0084 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.0099 U	0.01 U	0.0098 U	0.01 U	0.0097 U	0.019 U	0.099 U	0.0097 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.024 U	0.13 U	0.012 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.31 U	1.6 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg	0.025 J	0.37	0.05 J	0.26 J	0.4	0.036 J	0.71	3.8	0.86
Acenaphthylene	--	--	--	mg/kg	0.0092 U	0.011 J	0.0086 U	0.033 J	0.0086 U	0.0084 U	0.029 J	0.085 U	0.015 J
Acetophenone	780	12000	0.058	mg/kg	0.0078 U	0.0072 U	0.0073 U	0.0071 U	0.0073 U	0.0071 U	0.014 U	0.072 U	0.0071 U
Anthracene	1800	23000	5.8	mg/kg	0.036 J	0.54	0.093 J	0.54	0.44	0.058 J	1.2	5	1.4
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U	0.014 U	0.028 U	0.15 U	0.014 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.049 U	0.25 U	0.025 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.12	**4.1**	**0.35**	**3.5**	**1.9**	**0.26**	**6.7**	**19**	**3.9**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.12**	**4.5**	**0.39**	**4.2**	**2.1**	**0.34**	**8.2**	**23**	**4.4**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.17**	**7.2**	**0.57**	**7.2**	**2.7**	**0.42**	**10**	**30**	**5**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.082 J	3.4	0.48	5.7 J+	2.8	0.42 J+	12 J+	26	4.8
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	0.057	**2.5**	0.24	**2.6**	1.1	0.16	**3.5**	**9.9**	**2**
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.1 U	0.01 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0084 U	0.0078 U	0.0079 U	0.0077 U	0.0079 U	0.0077 U	0.015 U	0.078 U	0.0077 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.059 J	0.013 U	0.064 J	0.013 U	0.013 U	0.025 U	0.13 U	0.013 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.019 J	0.019 J	0.14 J	0.01 U	0.01 U	0.088 J	0.1 U	0.01 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.024 U	0.024 U	0.024 U	0.024 U	0.023 U	0.046 U	0.24 U	0.023 U
Carbazole	--	--	--	mg/kg	0.016 J	0.6	0.06 J	0.48	0.29 J	0.037 J	0.88	3.2 J	0.76
Chrysene	**16**	290	1.2	mg/kg	0.13 J	5.9	0.53	6	2.5	0.36	8.4	**25**	4.3
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**0.028 J**	**1**	**0.12**	**1.3**	**0.58**	**0.095 J+**	**2.6 J+**	**5.7 J+**	**0.94**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.011 U	0.13 J	0.027 J	0.095 J	0.11 J	0.013 J	0.23 J	1.3 J	0.36
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.0094 U	0.0095 U	0.0093 U	0.0095 U	0.0092 U	0.018 U	0.094 U	0.0092 U
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.0096 U	0.0097 U	0.0095 U	0.0097 U	0.0094 U	0.019 U	0.096 U	0.0094 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.034 J	0.011 J	0.045 J	0.01 U	0.0097 U	0.019 U	0.099 U	0.0097 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.032 U	0.17 U	0.017 U
Fluoranthene	240	3000	8.9	mg/kg	0.21 J	7.4	0.75	6.3	3.7	0.46	10	35	7.1
Fluorene	240	3000	0.54	mg/kg	0.022 J	0.16 J	0.039 J	0.14 J	0.18 J	0.024 J	0.45 J	2.5 J	0.69
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.013 U	0.014 U	0.013 U	0.013 U	0.013 U	0.026 U	0.13 U	0.013 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.0093 U	0.0094 U	0.0092 U	0.0094 U	0.0091 U	0.018 U	0.093 U	0.0091 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.021 U	0.021 U	0.02 U	0.021 U	0.02 U	0.04 U	0.21 U	0.02 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-036	CFISS-037	CFISS-037	CFISS-038	CFISS-038	CFISS-039	CFISS-039	CFISS-040	CFISS-040
			Sample Date:	7/15/2016	7/15/2016	7/15/2016	7/14/2016	7/14/2016	7/14/2016	7/14/2016	7/13/2016	7/13/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-036-SO-0.5-2	CFISS-037-SO-0-0.5	CFISS-037-SO-0.5-2	CFISS-038-S0-0-0.5	CFISS-038-S0-0.5-2	CFISS-039-S0-0-0.5	CFISS-039-S0-0.5-2	CFISS-040-S0-0-0.5	CFISS-040-S0-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.023 U	0.12 U	0.012 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.096	**3.7**	**0.45**	**5.7**	**2.6 J+**	**0.38 J+**	**11 J+**	**25 J+**	**4.7 J+**
Isophorone	570	2400	0.026	mg/kg	0.0077 U	0.0071 U	0.0072 U	0.007 U	0.0072 U	0.007 U	0.014 U	0.071 U	0.007 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.0096 J	0.098 J	0.015 J	0.083 J	0.087 J	0.013 J	0.2 J	1.3 J	0.32
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.1 U	0.01 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.021 U	0.11 U	0.011 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.03 U	0.03 U	0.03 U	0.03 U	0.029 U	0.058 U	0.3 U	0.03 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.043 U	0.04 U	0.04 U	0.04 U	0.04 U	0.039 U	0.077 U	0.4 U	0.039 U
Phenanthrene	--	--	--	mg/kg	0.15 J	3.7	0.61	3	2.7	0.3 J	6.1	27	6.5
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.016 J	0.011 U	0.011 U	0.027 J	0.011 U	0.021 U	0.11 U	0.011 U
Pyrene	180	2300	1.3	mg/kg	0.25 J	5.7	0.93	4.3	3.7	0.44	9.8	38	6.4

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-041	CFISS-041	CFISS-042	CFISS-042	CFISS-043	CFISS-043
			Sample Date:	7/16/2016	7/16/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-41-SO-0-0.5	CFISS-41-SO-0.5-2	CFISS-042-SO-0-0.5	CFISS-042-SO-0.5-2	CFISS-043-SO-0-0.5	CFISS-043-SO-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units						
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.028 U	0.029 U	0.056 U	0.029 U	0.056 U	0.028 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.024 U	0.025 U	0.049 U	0.025 U	0.049 U	0.025 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.086 U	0.091 U	0.18 U	0.091 U	0.17 U	0.088 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.013 U	0.014 UJ	0.027 U	0.014 U	0.027 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.03 U	0.032 U	0.062 U	0.032 U	0.061 U	0.031 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.032 U	0.034 U	0.066 U	0.034 U	0.065 U	0.033 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0092 U	0.0096 U	0.019 U	0.0096 U	0.019 U	0.0094 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0076 U	0.008 U	0.016 U	0.008 U	0.015 U	0.0078 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.071 U	0.075 U	0.15 U	0.075 U	0.14 U	0.073 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.24 U	0.26 U	0.5 U	0.26 U	0.49 U	0.25 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.013 U	0.013 U	0.026 U	0.013 U	0.026 U	0.013 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.017 U	0.018 U	0.035 U	0.018 U	0.035 U	0.018 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0073 U	0.0077 U	0.015 U	0.0077 U	0.015 U	0.0075 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0082 U	0.0086 U	0.017 U	0.0086 U	0.017 U	0.0084 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.093 J	0.0079 J	0.098 J	0.031 J	0.047 J	0.03 J
2-Methylphenol	320	4100	0.075	mg/kg	0.014 U	0.015 U	0.029 U	0.015 U	0.028 U	0.014 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.011 U	0.022 U	0.011 U	0.022 U	0.011 U
2-Nitrophenol	--	--	--	mg/kg	0.011 U	0.011 U	0.022 UJ	0.011 UJ	0.022 UJ	0.011 UJ
3 & 4 Methylphenol	--	--	--	mg/kg	0.0086 U	0.009 U	0.018 U	0.009 U	0.017 U	0.0088 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.036 U	0.038 U	0.074 U	0.038 U	0.073 U	0.037 U
3-Nitroaniline	--	--	--	mg/kg	0.0096 U	0.01 U	0.02 U	0.01 U	0.019 U	0.0098 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.086 U	0.09 U	0.18 U	0.09 U	0.17 U	0.088 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.011 U	0.021 U	0.011 U	0.021 U	0.01 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.014 U	0.015 U	0.028 U	0.015 U	0.028 U	0.014 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0083 U	0.0087 U	0.017 U	0.0087 U	0.017 U	0.0085 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.0097 U	0.01 U	0.02 U	0.01 U	0.02 U	0.0099 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.012 U	0.013 U	0.025 U	0.013 U	0.025 U	0.012 U
4-Nitrophenol	--	--	--	mg/kg	0.16 U	0.16 U	0.32 U	0.16 U	0.31 U	0.16 U
Acenaphthene	360	4500	0.55	mg/kg	0.31 J	0.022 J	0.3 J	0.16 J	0.37 J	0.14 J
Acenaphthylene	--	--	--	mg/kg	0.0083 U	0.0087 U	0.017 U	0.0087 U	0.017 U	0.0085 U
Acetophenone	780	12000	0.058	mg/kg	0.007 U	0.0074 U	0.014 U	0.012 J	0.014 U	0.0076 J
Anthracene	1800	23000	5.8	mg/kg	0.59	0.032 U	0.5 J	0.21 J	1	0.28 J
Atrazine	2.4	10	0.0002	mg/kg	0.014 U	0.015 U	0.029 U	0.015 U	0.029 U	0.015 U
Benzaldehyde	170	820	0.0041	mg/kg	0.025 U	0.026 U	0.05 U	0.026 U	0.05 U	0.025 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	**3**	0.16	**3.1**	**1.2**	**6.8**	**1.1**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**3.5**	**0.18**	**4.1**	**1.5**	**8.5**	**1.3**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**4.4**	**0.28**	**5.4**	**1.8**	**9.8**	**1.8**
Benzo[g,h,i]perylene	--	--	--	mg/kg	3.9	0.13 J	6.3	1.3	11	1.2
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg	**1.9**	0.091	**2.2**	0.78	**3.9**	0.63
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.01 U	0.011 U	0.021 U	0.011 U	0.02 U	0.01 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0076 U	0.008 U	0.016 U	0.008 U	0.015 U	0.0078 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.013 U	0.013 U	0.026 U	0.013 U	0.025 U	0.013 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.029 J	0.01 U	0.037 J	0.01 U	0.73	0.01 U
Caprolactam	3100	40000	0.25	mg/kg	0.023 U	0.024 U	0.048 U	0.024 U	0.047 U	0.024 U
Carbazole	--	--	--	mg/kg	0.44	0.022 J	0.57 J	0.2 J	0.82	0.19 J
Chrysene	**16**	290	1.2	mg/kg	3.9	0.21 J	4.8	1.6	10	1.5
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	**1**	0.018 U	**1.4**	**0.32**	**2.5**	**0.25**
Dibenzofuran	**7.3**	100	0.015	mg/kg	0.17 J	0.01 U	0.097 J	0.042 J	0.12 J	0.065 J
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0092 U	0.0096 U	0.019 U	0.0096 U	0.019 U	0.0094 U
Dimethyl phthalate	--	--	--	mg/kg	0.0094 U	0.0098 U	0.019 U	0.0098 U	0.019 U	0.0096 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.019 J	0.01 U	0.02 U	0.014 J	0.052 J	0.018 J
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.016 U	0.017 U	0.034 U	0.017 U	0.033 U	0.017 U
Fluoranthene	240	3000	8.9	mg/kg	4.5	0.28 J	6.6	2.4	10	2.2
Fluorene	240	3000	0.54	mg/kg	0.26 J	0.012 J	0.13 J	0.086 J	0.25 J	0.12 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.013 U	0.014 U	0.027 U	0.014 U	0.026 U	0.013 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0091 U	0.0095 U	0.019 UJ	0.0095 UJ	0.018 UJ	0.0093 UJ
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.02 U	0.021 U	0.041 U	0.021 U	0.041 U	0.021 U

Preliminary - Under EPA and MDEQ Review

Table L8. Semivolatile Organic Compounds in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-041	CFISS-041	CFISS-042	CFISS-042	CFISS-043	CFISS-043
			Sample Date:	7/16/2016	7/16/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:	CFISS-41-SO-0-0.5	CFISS-41-SO-0.5-2	CFISS-042-SO-0-0.5	CFISS-042-SO-0.5-2	CFISS-043-SO-0-0.5	CFISS-043-SO-0.5-2
Parameter	Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units						
Hexachloroethane	1.8	8	0.0002	mg/kg	0.012 U	0.012 U	0.024 UJ	0.012 UJ	0.024 UJ	0.012 UJ
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**3.8**	0.14	**5.5**	**1.3**	**9.5**	**1.3**
Isophorone	570	2400	0.026	mg/kg	0.0069 U	0.0073 U	0.014 U	0.0073 U	0.014 U	0.0071 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.28 J	0.01 J	0.17 J-	0.041 J-	0.094 J-	0.067 J-
Nitrobenzene	5.1	22	0.000092	mg/kg	0.01 U	0.011 U	0.021 U	0.011 U	0.021 U	0.01 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.011 U	0.011 U	0.022 U	0.011 U	0.022 U	0.011 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.029 U	0.031 U	0.06 U	0.031 U	0.059 U	0.03 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.039 U	0.041 U	0.08 U	0.041 U	0.079 U	0.04 U
Phenanthrene	--	--	--	mg/kg	3.1	0.18 J	3.5	1.3	4.3	1.4
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.011 U	0.033 J	0.011 U	0.021 U	0.011 U
Pyrene	180	2300	1.3	mg/kg	5.6	0.3 J	5.9	2.6	9.7	2.1

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-001	CFISS-001	CFISS-002	CFISS-002	CFISS-002	CFISS-002	CFISS-003	CFISS-003	CFISS-004
			Sample Date:	6/14/2016	6/14/2016	6/14/2016	6/14/2016	7/19/2016	7/19/2016	6/15/2016	6/15/2016	6/15/2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-001-SO-0-0.5	CFISS-001-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-003-SO-0-0.5	CFISS-003-SO-0.5-2	CFISS-004-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**26100**	**11900**	**44900**	**24500**	**37700**	**22000**	**28000**	**16600**	**20500**
Antimony	**3.1**	47	0.035	mg/kg	0.36 UJ	0.35 UJ	0.38 UJ	0.38 UJ	0.21 J-	0.11 J-	0.36 UJ	0.36 UJ	0.33 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**8.4**	**3.4**	**6.7**	**7**	**4.6**	**6.4**	**6**	**6.2**	**7.3**
Barium	1500	22000	16	mg/kg	199	66.8	170	182	220	164	201	184	181
Beryllium	16	230	1.9	mg/kg	1.1	0.44	3	0.71	3.7 J	1.1 J	1.8	0.53	0.74
Cadmium	7.1	98	0.069	mg/kg	0.27 U	0.26 U	0.29 U	0.29 U	0.25 J	0.08 J	0.28 U	0.27 U	0.25 U
Calcium	--	--	--	mg/kg	6420	5230	21300	6530	22000	6100	16700	9800	4160
Chromium	--	--	--	mg/kg	12	7.5	13.3	11.6	18.6	18.2	14.7	14	10.6
Cobalt	**2.3**	35	0.027	mg/kg	**5**	**4.8**	**4.1**	**4.8**	**5.4**	**5.9**	**5.2**	**6.1**	**6.3**
Copper	**310**	4700	2.8	mg/kg	10.4 J+	11 J+	14 J+	10.8 J+	16.9	15	12 J+	12.3 J+	11.3 J+
Cyanide, Total	**2.3**	15	0.0015	mg/kg	**8.5**	**6.3**	**29**	**12.3**	**18.2 J-**	**3.9 J-**	**19.8**	2	0.67
Iron	**5500**	82000	35	mg/kg	**20800**	**10300**	**15400**	**19400**	**15000**	**19500**	**16100**	**16800**	**17700**
Lead	**400**	800	--	mg/kg	15.8 J+	5.8 J+	14.2 J+	12.2 J+	17.3	12.1	12.1 J+	10.9 J+	15.9 J+
Magnesium	--	--	--	mg/kg	11100	8090	11100	15300	10100	11800	10400	13200	11000
Manganese	**180**	2600	2.8	mg/kg	**597 J**	**226 J**	**413 J**	**644 J**	**502**	**629**	**544 J**	**598 J**	**682 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.013 U	0.021	0.013 U	0.023	0.019 J	0.026 J	0.013 U	0.016 J	0.013 U
Nickel	150	2200	2.6	mg/kg	18.5	8.3	25.8	12.2	44.5	15.8	24.8	12.5	13.9
Potassium	--	--	--	mg/kg	1640	704	2430	1720	3080	1440	2560	1120	1460
Selenium	39	580	0.052	mg/kg	0.34 U	0.33 U	0.35 U	0.35 U	0.74 J	0.85 J	0.34 U	0.33 U	0.31 U
Silver	39	580	0.08	mg/kg	0.66 U	0.64 U	0.69 U	0.69 U	0.056 J	0.035 J	0.67 U	0.65 U	0.61 U
Sodium	--	--	--	mg/kg	1890	935	10500	1550	9000	2090	5280	443	264
Thallium	**0.078**	1.2	0.0014	mg/kg	0.14 U	0.13 U	**0.15 J**	**0.15 J**	**0.17 J**	**0.13 J**	0.14 U	0.13 U	0.13 U
Vanadium	**39**	580	8.6	mg/kg	19.8	8	24.3	17.6	35.8	21.5	25.6	13.1	19
Zinc	2300	35000	37	mg/kg	47.4	29.3	46.4	56.1	59.2 J+	56.6 J+	56.3	45.9	51.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-004	CFISS-005	CFISS-005	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006
					Sample Date:	6/15/2016	6/16/2016	6/16/2016	6/17/2016	6/17/2016	6/17/2016	7/19/2016	7/19/2016	7/19/2016
					Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2
					Sample Designation:	CFISS-004-SO-0-0.5-Pb	CFISS-004-SO-0.5-2	CFISS-005-SO-0-0.5	CFISS-005-SO-0.5-2	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg	NA	**19100**	**15300**	**17300**	**13600**	**14700**	**14900**	**17100**	**17300**	**15100**
Antimony	**3.1**	47	0.035	mg/kg	NA	0.37 UJ	0.36 UJ	0.35 UJ	0.47 UJ	0.45 UJ	0.44 UJ	0.21 J-	0.23 J-	1.9 J-
Arsenic	**0.68**	3	0.0015	mg/kg	NA	**8.6**	**4.9**	**6.7**	**4.2**	**5.2**	**4.8**	**5**	**4.9**	**4.7**
Barium	1500	22000	16	mg/kg	NA	126	122	114	105	109	123	138	136	162
Beryllium	16	230	1.9	mg/kg	NA	0.58	0.51	0.53	0.48	0.48	0.52	0.77 J	0.8 J	0.67
Cadmium	7.1	98	0.069	mg/kg	NA	0.28 U	0.28 U	0.26 U	0.36 U	0.34 U	0.33 U	0.26 J	0.22 J	0.11 J
Calcium	--	--	--	mg/kg	NA	2890	26400	12400	13300 J	5820 J	11600 J	20300	20900	10600
Chromium	--	--	--	mg/kg	NA	11.1	10.7	11.8	9.7	10	9.5	17.7	16.7	17.9
Cobalt	**2.3**	35	0.027	mg/kg	NA	**7**	**5.8**	**5.7**	**4.8 J+**	**5.1 J+**	**4.9 J+**	**6.1**	**6.1**	**5.9**
Copper	**310**	4700	2.8	mg/kg	NA	13.1 J+	28 J+	15.2 J+	22.8 J	23.2 J	22 J	42.1	38.8	**721**
Cyanide, Total	**2.3**	15	0.0015	mg/kg	NA	0.21	0.24	0.21	0.26 J	0.069 J	0.096 J	0.21 J-	0.15 J-	0.15 J-
Iron	**5500**	82000	35	mg/kg	NA	**18200**	**15000**	**18000**	**12100**	**15700**	**11800**	**15100**	**15000**	**15900**
Lead	**400**	800	--	mg/kg	20.1	14.3 J+	15.3 J+	12.1 J+	13	11.3	17.1	21.7 J	**406 J**	28.3
Magnesium	--	--	--	mg/kg	NA	11400	10400	13900	9940	9720	8860	9940	10000	9580
Manganese	**180**	2600	2.8	mg/kg	NA	**674 J**	**460 J**	**465 J**	**372**	**381**	**372**	**537**	**498**	**562**
Mercury	1.1	4.6	0.0033	mg/kg	NA	0.027	0.016 J	0.017 J	0.021	0.015 J	0.017 J	0.033 J	0.038 J	0.025 J
Nickel	150	2200	2.6	mg/kg	NA	12.7	16.8	12.8	19.9 J-	13.8 J-	21.5 J-	31.2	30.9	15.1
Potassium	--	--	--	mg/kg	NA	1050	1100	1210	1000	899	1130	1390	1400	1050
Selenium	39	580	0.052	mg/kg	NA	0.35 J	0.34 U	0.35 J	0.44 U	0.42 U	0.41 U	0.78 J	0.75 J	0.82 J
Silver	39	580	0.08	mg/kg	NA	0.69 U	0.67 U	0.64 U	0.86 U	0.82 U	0.8 U	0.092 J	0.089 J	0.086 J
Sodium	--	--	--	mg/kg	NA	103	41.5 J	62.7 J	69.3 J	41.9 J	76.8 J	118 J	120 J	74.4 J
Thallium	**0.078**	1.2	0.0014	mg/kg	NA	0.14 U	0.14 U	0.13 U	0.18 U	0.17 U	0.17 U	**0.12 J**	**0.12 J**	**0.11 J**
Vanadium	**39**	580	8.6	mg/kg	NA	13.5	13.5	12.8	11.3	12.3	12.5	17.7	17.4	12.5
Zinc	2300	35000	37	mg/kg	NA	48.6	54.2	46.5	44.1	51.6	51.6	65 J+	66.1 J+	214 J+

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-007	CFISS-007	CFISS-008	CFISS-008	CFISS-008	CFISS-008	CFISS-009	CFISS-009	CFISS-010
					Sample Date:	6/17/2016	6/17/2016	6/18/2016	6/18/2016	7/26/2016	7/26/2016	6/22/2016	6/22/2016	6/22/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
					Sample Designation:	CFISS-007-SO-0-0.5	CFISS-007-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-009-SO-0-0.5	CFISS-009-SO-0.5-2	CFISS-010-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg		**20000**	**14200**	**22700**	**15000**	**32700**	**19000**	**14800**	**15600**	**14300**
Antimony	**3.1**	47	0.035	mg/kg		0.47 UJ	0.4 UJ	0.39 UJ	0.4 UJ	0.24 J-	0.14 J-	0.46 U	0.46 U	0.45 U
Arsenic	**0.68**	3	0.0015	mg/kg		**4.4**	**7.5**	**5.2**	**5.5**	**6**	**5.8**	**5.8**	**7.2**	**4.5**
Barium	1500	22000	16	mg/kg		91.5	115	102	107	120	118	118	100	112
Beryllium	16	230	1.9	mg/kg		0.83	0.57	0.8	0.67	0.92	0.8	0.53	0.53	0.47
Cadmium	7.1	98	0.069	mg/kg		0.35 U	0.3 U	0.3 U	0.3 U	0.27 J	0.13 J	0.35 U	0.35 U	0.34 U
Calcium	--	--	--	mg/kg		13000 J	17300 J	18400 J	25000 J	21400	22600	14800	12400	15200
Chromium	--	--	--	mg/kg		29	11.8	80.3	10.9	25.2	20	11.2	11.7	10.6
Cobalt	**2.3**	35	0.027	mg/kg		**5.5 J+**	**6.2 J+**	**6.7 J+**	**5.8 J+**	**6.2**	**6.2**	**5.9**	**5.7**	**5.7**
Copper	**310**	4700	2.8	mg/kg		46.2 J	17.6 J	18.8 J	14.1 J	21.1	17.1	13.7 J	13.3 J	17.5 J
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.29	0.11	0.66	2	0.97	1.6	0.07 J	0.022 J	0.063 J
Iron	**5500**	82000	35	mg/kg		**18300**	**16100**	**16300**	**15200**	**16500**	**16600**	**16500**	**19100**	**15800**
Lead	**400**	800	--	mg/kg		15.1	16.8	13.9	10.3	16.9	13.5	12	12.6	13.7
Magnesium	--	--	--	mg/kg		8620	11600	12000	12500	11100	12700	11200	13100	10400
Manganese	**180**	2600	2.8	mg/kg		**406**	**467**	**397**	**404**	**448**	**501**	**525**	**494**	**497**
Mercury	1.1	4.6	0.0033	mg/kg		0.02	0.023	0.02	0.049	0.016 J	0.023 J	0.017 J	0.027	0.056
Nickel	150	2200	2.6	mg/kg		24.6 J-	12.5 J-	96.2 J-	13.5 J-	39.9	21.5	15.6	13	19.3
Potassium	--	--	--	mg/kg		971	939	1490	1190	2040 J+	1530 J+	856	835	847
Selenium	39	580	0.052	mg/kg		0.44 U	0.37 U	0.37 U	0.37 U	1.5 J	1.6 J	0.43 U	0.43 U	0.42 U
Silver	39	580	0.08	mg/kg		0.85 U	0.73 U	0.71 U	0.73 U	0.052 J	0.042 J	0.84 U	0.84 U	0.83 U
Sodium	--	--	--	mg/kg		317	244	1600	1460	3780	1550	42.9 U	43 U	42.4 U
Thallium	**0.078**	1.2	0.0014	mg/kg		0.18 U	0.15 U	0.15 U	0.15 U	**0.11 J**	**0.091 J**	0.17 U	0.17 U	0.17 U
Vanadium	**39**	580	8.6	mg/kg		14	10.9	16.1	10.4	18.9	14.4	13.1 J	12.9 J	13.3 J
Zinc	2300	35000	37	mg/kg		51.8	306	51.5	39.8	56.6	51.7	51	49.9	56.6

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-010	CFISS-011	CFISS-011	CFISS-011	CFISS-012	CFISS-012	CFISS-013	CFISS-013	CFISS-013
			Sample Date:	6/22/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/20/2016	6/20/2016	6/20/2016
			Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:	CFISS-010-SO-0.5-2	CFISS-011-SO-0-0.5	CFISS-011-SO-0.5-2	CFISS-011-SO-0-0.5-Pb	CFISS-012-SO-0-0.5	CFISS-012-SO-0.5-2	CFISS-013-SO-0-0.5	CFISS-013-SO-0.5-2	CFISS-013-SO-0-0.5-Pb
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Aluminum	**7700**	110000	3000	mg/kg	**15200**	**10600**	**11900**	NA	**9720**	**10500**	**17100**	**14400**	NA
Antimony	**3.1**	47	0.035	mg/kg	0.46 U	0.62 J	0.44 UJ	NA	0.44 UJ	0.4 UJ	0.38 UJ	0.43 UJ	NA
Arsenic	**0.68**	3	0.0015	mg/kg	**5.7**	**4.6**	**5.1**	NA	**4.5**	**4.3**	**4.6**	**5.8**	NA
Barium	1500	22000	16	mg/kg	107	69.6 J	92.9 J	NA	75 J	90.9 J	86 J	121 J	NA
Beryllium	16	230	1.9	mg/kg	0.49	0.4	0.47	NA	0.41 J	0.36 J	0.55	0.66	NA
Cadmium	7.1	98	0.069	mg/kg	0.35 U	0.31 U	0.33 U	NA	0.33 U	0.3 U	0.33 J	0.32 U	NA
Calcium	--	--	--	mg/kg	11100	44200 J	29300 J	NA	33500 J	37300 J	26400 J	31300 J	NA
Chromium	--	--	--	mg/kg	10.8	10.8 J	11.3 J	NA	10.1 J	11.1 J	17.5 J	21 J	NA
Cobalt	**2.3**	35	0.027	mg/kg	**5.4**	**5.3**	**5.7**	NA	**4.7**	**5.1**	**5.2**	**7.9**	NA
Copper	**310**	4700	2.8	mg/kg	14.4 J	18.1	12.6	NA	15.9	17	23.2	26.4	NA
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.043 J	0.04 J	0.033 J	NA	0.096 J	0.083 J	0.14	0.18	NA
Iron	**5500**	82000	35	mg/kg	**16800**	**14500**	**15900**	NA	**13300**	**14400**	**18800**	**22900**	NA
Lead	**400**	800	--	mg/kg	11.4	13.6 J	10.1 J	17.2	14.9 J	8.1 J	17.7 J	14.4 J	29.4
Magnesium	--	--	--	mg/kg	11100	11300	12500	NA	9310	11500	10900	13400	NA
Manganese	**180**	2600	2.8	mg/kg	**417**	**394**	**438**	NA	**471**	**419**	**356**	**528**	NA
Mercury	1.1	4.6	0.0033	mg/kg	0.02	0.016 J	0.018	NA	0.023	0.023	0.019	0.017	NA
Nickel	150	2200	2.6	mg/kg	11.8	17.2	12	NA	17.6	12.1	26.4	15.8	NA
Potassium	--	--	--	mg/kg	828	956	1010	NA	781	761	1090	1220	NA
Selenium	39	580	0.052	mg/kg	0.43 U	0.38 U	0.41 U	NA	0.41 U	0.37 U	0.36 U	0.4 U	NA
Silver	39	580	0.08	mg/kg	0.84 U	0.74 U	0.81 U	NA	0.8 U	0.72 U	0.7 U	0.78 U	NA
Sodium	--	--	--	mg/kg	42.7 U	43.4 J	41.2 U	NA	41.1 U	37 U	342	487	NA
Thallium	**0.078**	1.2	0.0014	mg/kg	0.17 U	0.15 U	0.17 U	NA	0.17 U	0.15 U	0.14 U	0.16 U	NA
Vanadium	**39**	580	8.6	mg/kg	11.8 J	11.5	10.8	NA	10.4	9.2	16.6	19.7	NA
Zinc	2300	35000	37	mg/kg	46.2	59.1	47.9	NA	49.2	47.2	53.4	72.5	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-014	CFISS-014	CFISS-015	CFISS-015	CFISS-016	CFISS-016	CFISS-017	CFISS-017	CFISS-018
				Sample Date:	6/20/2016	6/20/2016	6/18/2016	6/18/2016	6/23/2016	6/28/2016	6/23/2016	6/29/2016	6/24/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5
				Sample Designation:	CFISS-014-SO-0-0.5	CFISS-014-SO-0.5-2	CFISS-015-SO-0-0.5	CFISS-015-SO-0.5-2	CFISS-016-SO-0-0.5	CFISS-016-SO-0.5-2	CFISS-017-SO-0.5-2	CFISS-017-SO-0-0.5	CFISS-018-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**18900**	**16900**	**19200**	**16200**	**14500 J**	**13200 J**	**12100 J**	**12800**	**11400**
Antimony	**3.1**	47	0.035	mg/kg	0.42 UJ	0.42 UJ	0.43 UJ	0.43 UJ	0.17 J-	0.12 J-	0.12 J-	0.15 J-	0.18 J-
Arsenic	**0.68**	3	0.0015	mg/kg	**5.7**	**4.9**	**5.6**	**4.9**	**5.1**	**5**	**4.7**	**4.3**	**4.2**
Barium	1500	22000	16	mg/kg	101 J	101 J	96.2	84.2	99.8	105	109	77.1	59.4
Beryllium	16	230	1.9	mg/kg	0.96	0.76	0.62	0.53	0.59	0.53	0.48 J	0.48 J	0.52 J
Cadmium	7.1	98	0.069	mg/kg	0.32 U	0.32 U	0.33 U	0.32 U	0.19 J	0.085 J	0.054 J	0.16 J	0.18 J
Calcium	--	--	--	mg/kg	21600 J	21800 J	16500 J	13800 J	16900	23200	30400	24700	30400
Chromium	--	--	--	mg/kg	14.5 J	17.2 J	11.7	11.7	18.3	13.6	17	15 J-	18.6
Cobalt	**2.3**	35	0.027	mg/kg	**5.8**	**7.9**	**6.2 J+**	**5.3 J+**	**6.1**	**5.9**	**5.6**	**5.6**	**5.5**
Copper	**310**	4700	2.8	mg/kg	26.6	34.2	13.9 J	21.5 J	19	17	14.1	16.4	15.8
Cyanide, Total	**2.3**	15	0.0015	mg/kg	2.3	**2.5**	0.71	1.6	0.12	0.12	0.044 J	0.16	0.15
Iron	**5500**	82000	35	mg/kg	**17600**	**22600**	**14700**	**14400**	**16000**	**16100**	**15300**	**14700**	**13900**
Lead	**400**	800	--	mg/kg	40.2 J	49.9 J	11.7	9.5	19.1	10.6	9.4	15.2	13.5
Magnesium	--	--	--	mg/kg	10700	12800	10700	10700	11500	12500	12700	11600	11600
Manganese	**180**	2600	2.8	mg/kg	**408**	**482**	**417**	**419**	**439**	**459**	**444**	**353**	**341**
Mercury	1.1	4.6	0.0033	mg/kg	0.017	0.022	0.021	0.019	0.018 J	0.018 J	0.018 J	0.016 U	0.017 J
Nickel	150	2200	2.6	mg/kg	26.4	17.1	29.4 J-	13 J-	25.4	13.5	14	21.6 J-	29.8
Potassium	--	--	--	mg/kg	1710	1540	1360	1380	1250	1130	1020	977	825
Selenium	39	580	0.052	mg/kg	0.45 J	0.4 U	0.95 J	0.4 U	1.7 J	1.8 J	1.7 J	1.5 J	1.4 J
Silver	39	580	0.08	mg/kg	0.77 U	0.77 U	0.79 U	0.78 U	0.055 J	0.037 J	0.03 J	0.046 J	0.046 J
Sodium	--	--	--	mg/kg	1750	2270	1520	1700	64.1 J	54.4 J	58 J	61.1 J	79.9 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.16 U	0.16 U	0.16 U	**0.091 J**	**0.094 J**	**0.079 J**	**0.085 J**	**0.085 J**
Vanadium	**39**	580	8.6	mg/kg	17.2	23	15.7	11.1	14.6	11.1	11	12.9	13.7
Zinc	2300	35000	37	mg/kg	72	67.7	59.2	45.5	59.7	47.5	44.4	48.3	48.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-018	CFISS-019	CFISS-019	CFISS-020	CFISS-020	CFISS-020	CFISS-021	CFISS-021	CFISS-021
					Sample Date:	6/24/2016	6/24/2016	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2
					Sample Designation:	CFISS-018-SO-0.5-2	CFISS-019-SO-0-0.5	CFISS-019-SO-0.5-2	CFISS-020-SO-0-0.5	CFISS-DUP2-SO	CFISS-020-SO-0.5-2	CFISS-021-SO-0-0.5	CFISS-021-SO-0-0.5Pb	CFISS-021-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg		**8620**	**15700**	**11700**	**14300**	**13700**	**10700**	**22600**	NA	**12500**
Antimony	**3.1**	47	0.035	mg/kg		0.092 J-	0.31 J-	0.25 J-	0.26 J-	0.25 J-	0.14 J-	0.63 J-	NA	0.16 J-
Arsenic	**0.68**	3	0.0015	mg/kg		**4.9**	**5.1**	**4.9**	**4.8**	**4.6**	**5**	**8.2**	NA	**5.1**
Barium	1500	22000	16	mg/kg		74.8	92.9	119	93.8	89.8	99.4	113	NA	113
Beryllium	16	230	1.9	mg/kg		0.4 J	0.6	0.49 J	0.56	0.53 J	0.44 J	0.91	NA	0.53 J
Cadmium	7.1	98	0.069	mg/kg		0.081 J	0.27 J	0.13 J	0.26 J	0.28 J	0.24 J	0.97 J	NA	0.15 J
Calcium	--	--	--	mg/kg		32400	25800	24300	30600	29400	25900	20300	NA	22200
Chromium	--	--	--	mg/kg		17.8	17.9	22.9	19.3	17	14.8	31.1	NA	22.1
Cobalt	**2.3**	35	0.027	mg/kg		**5.5**	**6**	**6.1**	**5.8**	**5.9**	**5.9**	**7.7**	NA	**6.1**
Copper	**310**	4700	2.8	mg/kg		15.9	21.9	25.2	25.8	25.1	20	44	NA	21.7
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.017 J	0.22	0.073 J	0.25	0.25	0.077 J	0.56	NA	0.36
Iron	**5500**	82000	35	mg/kg		**14100**	**14900**	**14900**	**16400**	**15900**	**15900**	**24500**	NA	**17200**
Lead	**400**	800	--	mg/kg		8.6	20.6	14.9	21.7	23.8	15.2	46.5 J	55.1	15.3
Magnesium	--	--	--	mg/kg		11900	10900	11600	11600	11500	11600	11100	NA	11100
Manganese	**180**	2600	2.8	mg/kg		**386**	**381**	**447**	**393**	**382**	**475**	**499**	NA	**477**
Mercury	1.1	4.6	0.0033	mg/kg		0.028 J	0.026 J	0.027 J	0.024 J	0.02 J	0.017 J	0.028 J	NA	0.026 J
Nickel	150	2200	2.6	mg/kg		15.2	35.4	19.1	30.8	30.2	13.9	93.6	NA	20.5
Potassium	--	--	--	mg/kg		721	1040	1020	1170	1010	805	1600	NA	1040
Selenium	39	580	0.052	mg/kg		1.5 J	1.3 J	1.6 J	1.5 J	1.4 J	1.5 J	3.8 J	NA	1.8 J
Silver	39	580	0.08	mg/kg		0.03 J	0.058 J	0.055 J	0.17 J	0.19 J	0.19 J	0.12 J	NA	0.05 J
Sodium	--	--	--	mg/kg		46.1 J	673	71.3 J	272 J	185 J	71.1 J	1200	NA	288
Thallium	**0.078**	1.2	0.0014	mg/kg		0.06 J	**0.083 J**	0.075 J	**0.09 J**	**0.082 J**	**0.095 J**	**0.17 J**	NA	**0.083 J**
Vanadium	**39**	580	8.6	mg/kg		8.6	17.1	12.3	17	14.8	10.3	35.3	NA	12.1
Zinc	2300	35000	37	mg/kg		51.3	64.8	54.3	79.4	77	75.3	103	NA	73.8

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-022	CFISS-022	CFISS-023	CFISS-023	CFISS-024	CFISS-024	CFISS-024	CFISS-025	CFISS-025
					Sample Date:	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/29/2016	6/29/2016	6/29/2016	6/30/2016	6/30/2016
					Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
					Sample Designation:	CFISS-022-SO-0-0.5	CFISS-022-SO-0.5-2	CFISS-023-SO-0-0.5	CFISS-023-SO-0.5-2	CFISS-024-SO-0-0.5	CFISS-024-SO-0-0.5Pb	CFISS-024-SO-0.5-2	CFISS-025-SO-0-0.5	CFISS-025-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg		**27500 J**	**17700 J**	**17500 J**	**15100 J**	**22900**	NA	**13200**	**24800**	**13900**
Antimony	**3.1**	47	0.035	mg/kg		1 J-	0.16 J-	0.15 J-	0.13 J-	0.22 J-	NA	0.14 J-	0.4 J-	0.14 J-
Arsenic	**0.68**	3	0.0015	mg/kg		**12.3**	**5.8**	**5.3**	**5.6**	**6**	NA	**5**	**6**	**4.5**
Barium	1500	22000	16	mg/kg		143	168	110	138	97.2	NA	123	98.7	94.7
Beryllium	16	230	1.9	mg/kg		0.99	0.89	0.65	0.57	0.81	NA	0.56	0.67	0.54
Cadmium	7.1	98	0.069	mg/kg		1.2 J	0.13 J	0.18 J	0.092 J	0.28 J	NA	0.1 J	0.38 J	0.099 J
Calcium	--	--	--	mg/kg		12600	11100	13300	17600	23600	NA	25400	27900	26900
Chromium	--	--	--	mg/kg		50.4	20	15.8	15.5	18.5 J-	NA	15.9 J-	18.3 J-	15.8 J-
Cobalt	**2.3**	35	0.027	mg/kg		**9.3**	**6.5**	**6.5**	**6.5**	**6.3**	NA	**6.1**	**6.3**	**5.7**
Copper	**310**	4700	2.8	mg/kg		47.6	17.8	17.4	16.6	19.6	NA	17.7	33.3	15.6
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.66	0.63	0.19	0.11	0.31	NA	0.14 J-	0.69	0.16
Iron	**5500**	82000	35	mg/kg		**30400**	**17800**	**17200**	**17200**	**16700**	NA	**15400**	**17500**	**15600**
Lead	**400**	800	--	mg/kg		64.9	15	14.6	12.8	18.1	24.5	12.4	19.7	11.1
Magnesium	--	--	--	mg/kg		10700	10700	11000	11100	11800	NA	11700	11700	11800
Manganese	**180**	2600	2.8	mg/kg		**564**	**563**	**465**	**501**	**390**	NA	**437**	**399**	**403**
Mercury	1.1	4.6	0.0033	mg/kg		0.026 J	0.021 J	0.02 J	0.021 J	0.039 J	NA	0.021 J	0.015 U	0.016 J
Nickel	150	2200	2.6	mg/kg		142	18.6	26.3	14.3	51.4 J-	NA	19 J-	46.6 J-	18.6 J-
Potassium	--	--	--	mg/kg		2150	1280	1150	1210	1790	NA	1270	1680	1210
Selenium	39	580	0.052	mg/kg		13.3	1.9 J	1.8 J	1.9 J	1.6 J	NA	1.5 J	1.9 J	1.5 J
Silver	39	580	0.08	mg/kg		0.11 J	0.047 J	0.048 J	0.043 J	0.047 J	NA	0.049 J	0.065 J	0.034 J
Sodium	--	--	--	mg/kg		1670	461	79.9 J	80.3 J	1520	NA	177 J	312	93.4 J
Thallium	**0.078**	1.2	0.0014	mg/kg		**0.4 J**	**0.11 J**	**0.098 J**	**0.098 J**	**0.1 J**	NA	**0.082 J**	**0.11 J**	0.077 J
Vanadium	**39**	580	8.6	mg/kg		**54.5**	15.7	15.3	13	21.7	NA	13.4	20.9	12.6
Zinc	2300	35000	37	mg/kg		88.2	55.1	89.2	50.5	77.8	NA	52.4	70.3	47.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-026	CFISS-026	CFISS-027	CFISS-027	CFISS-027	CFISS-028	CFISS-028	CFISS-028	CFISS-029
				Sample Date:	6/30/2016	6/30/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	6/27/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5
				Sample Designation:	CFISS-026-SO-0-0.5	CFISS-026-SO-0.5-2	CFISS-027-SO-0-0.5	CFISS-DUP3-SO	CFISS-027-SO-0.5-2	CFISS-028-SO-0-0.5	CFISS-028-SO-0-0.5Pb	CFISS-028-SO-0.5-2	CFISS-029-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**37100**	**22400**	**30900**	**29400**	**24900**	**26900**	NA	**25600**	**17900 J**
Antimony	**3.1**	47	0.035	mg/kg	0.27 J-	0.16 J-	0.31 J-	0.27 J-	0.21 J-	0.15 J-	NA	0.17 J-	0.24 J-
Arsenic	**0.68**	3	0.0015	mg/kg	**7.2**	**5.6**	**8.2**	**8.1**	**5.8**	**5.3**	NA	**5.9**	**5.9**
Barium	1500	22000	16	mg/kg	251	158	293	296	165	262	NA	180	120
Beryllium	16	230	1.9	mg/kg	1.3	0.82	1.1	1	1.2	0.92	NA	0.9	0.58
Cadmium	7.1	98	0.069	mg/kg	0.55 J	0.17 J	0.65 J	0.67 J	0.19 J	0.22 J	NA	0.13 J	0.24 J
Calcium	--	--	--	mg/kg	9150	18800	7060	7670	19100	7530	NA	19500	18300
Chromium	--	--	--	mg/kg	27.6 J-	18.9 J-	38.5 J	69.1 J	54.4 J-	17.7 J-	NA	19.3 J-	14.9
Cobalt	**2.3**	35	0.027	mg/kg	**7.2**	**6.1**	**7.6**	**7.8**	**6.3**	**6.5**	NA	**6.1**	**6.3**
Copper	**310**	4700	2.8	mg/kg	45.2	18	40.3	41.7	18.7	20.6	NA	16.1	65.1
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.38	0.26	0.43	0.45	0.43	0.28	NA	0.77	0.27
Iron	**5500**	82000	35	mg/kg	**27100**	**17200**	**25500**	**26100**	**17200**	**18400**	NA	**16300**	**16500**
Lead	**400**	800	--	mg/kg	37.6	13	61.2	64.5	13.9	16.6	14.1	13.9	16.6
Magnesium	--	--	--	mg/kg	9870	11400	10000	10200	10700	10100	NA	11000	11200
Manganese	**180**	2600	2.8	mg/kg	**583**	**455**	**485**	**500**	**448**	**452**	NA	**454**	**445**
Mercury	1.1	4.6	0.0033	mg/kg	0.016 U	0.017 J	0.018 J	0.019 J	0.015 U	0.016 U	NA	0.016 U	0.024 J
Nickel	150	2200	2.6	mg/kg	54.1 J-	21.2 J-	78 J-	87 J-	38.5 J-	24.7 J-	NA	18.6 J-	25.2
Potassium	--	--	--	mg/kg	2290	2180	2370	2030	2480	1770	NA	2490	1330
Selenium	39	580	0.052	mg/kg	3.1 J	2 J	5.7 J	5.4 J	1.8 J	2.3 J	NA	1.9 J	1.7 J
Silver	39	580	0.08	mg/kg	0.11 J	0.05 J	0.096 J	0.1 J	0.053 J	0.063 J	NA	0.053 J	0.043 J
Sodium	--	--	--	mg/kg	2160	2020	739	638	2760	357	NA	3280	87.2 J
Thallium	**0.078**	1.2	0.0014	mg/kg	**0.17 J**	**0.12 J**	**0.22 J**	**0.2 J**	**0.15 J**	**0.12 J**	NA	**0.13 J**	**0.095 J**
Vanadium	**39**	580	8.6	mg/kg	27.7	18.2	33.7	32.8	31.2	18	NA	18	14.7
Zinc	2300	35000	37	mg/kg	90	56.8	83.3	87.5	53.4	64.3	NA	53.1	75.5

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-029	CFISS-030	CFISS-030	CFISS-031	CFISS-031	CFISS-032	CFISS-032	CFISS-032	CFISS-033
					Sample Date:	6/27/2016	7/25/2016	7/25/2016	7/13/2016	7/13/2016	7/12/2016	7/12/2016	7/12/2016	7/12/2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5
					Sample Designation:	CFISS-029-SO-0.5-2	CFISS-030-SO-0-0.5	CFISS-030-SO-0.5-2	CFISS-031-S0-0-0.5	CFISS-031-S0-0.5-2	CFISS-032-SO-0-0.5	CFISS-032-SO-0-0.5Pb	CFISS-032-SO-0.5-2	CFISS-033-SO-0-0.5
Aluminum	**7700**	110000	3000	mg/kg		**15600 J**	**22500**	**16200**	**29300**	**17300**	**23800**	NA	**20000**	**36200**
Antimony	**3.1**	47	0.035	mg/kg		0.17 J-	0.42 J-	0.12 J-	0.39 J-	0.12 J-	0.2 J-	NA	0.15 J-	1 J-
Arsenic	**0.68**	3	0.0015	mg/kg		**6.4**	**6.2**	**4.7**	**5.5**	**4.8**	**6.3**	NA	**5.2**	**8.6**
Barium	1500	22000	16	mg/kg		135	127	157	116	195	245 J+	NA	161 J+	262 J+
Beryllium	16	230	1.9	mg/kg		0.53	0.8	0.61	1.1	0.65	0.93	NA	0.85	1.5
Cadmium	7.1	98	0.069	mg/kg		0.14 J	0.39 J	0.16 J	0.59 J	0.14 J	0.28 J	NA	0.14 J	1.6
Calcium	--	--	--	mg/kg		17300	27500	20800	17300	11900	13300	NA	17500	9200
Chromium	--	--	--	mg/kg		17.1	18.5	17	20.1	17	17.1	NA	15.9	33.8
Cobalt	**2.3**	35	0.027	mg/kg		**6.4**	**6.3**	**5.8**	**5.8**	**6.6**	**7.1**	NA	**6.1**	**8.2**
Copper	**310**	4700	2.8	mg/kg		**398**	26.5	20.8	35.7	16.8	23.3	NA	30.7	93.3
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.15	0.4	0.18	0.8	0.24	0.31	NA	1.2	0.81
Iron	**5500**	82000	35	mg/kg		**17300**	**15500**	**15200**	**16900**	**16800**	**18900**	NA	**17100**	**23100**
Lead	**400**	800	--	mg/kg		16.1	33.2	16.8	24.8	13.3	19.2	15.8 J	11.9	84.6
Magnesium	--	--	--	mg/kg		11100	10700	10300	8230	8910	9530	NA	10100	9350
Manganese	**180**	2600	2.8	mg/kg		**515**	**461**	**494**	**387**	**592**	**457**	NA	**413**	**534**
Mercury	1.1	4.6	0.0033	mg/kg		0.024 J	0.031 J	0.016 J	0.015 UJ	0.017 UJ	0.049 J	NA	0.017 U	0.017 U
Nickel	150	2200	2.6	mg/kg		15.4	41	18.6	47.6	16.4	26.2	NA	17.5	62.8
Potassium	--	--	--	mg/kg		1100	1390 J+	1070 J+	1620	1030	1320	NA	1350	1920
Selenium	39	580	0.052	mg/kg		1.7 J	1.4 J	1.4 J	1 J	1.2 J	2.1 J	NA	1.7 J	2.6 J
Silver	39	580	0.08	mg/kg		0.053 J	0.073 J	0.04 J	0.066 J	0.04 J	0.063 J	NA	0.045 J	0.16 J
Sodium	--	--	--	mg/kg		77.4 J	679	413	1490	193 J	205 J	NA	1170	3050
Thallium	**0.078**	1.2	0.0014	mg/kg		**0.089 J**	**0.11 J**	**0.089 J**	**0.12 J+**	**0.098 J+**	**0.1 J**	NA	**0.094 J**	**0.18 J**
Vanadium	**39**	580	8.6	mg/kg		12.6	20.6	14.4	21.9	15.5	19.9	NA	15.4	**44.5**
Zinc	2300	35000	37	mg/kg		55	99.2	61.6	90.8 J	57.3 J	75.2	NA	84.9	158

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-033	CFISS-034	CFISS-034	CFISS-035	CFISS-035	CFISS-036	CFISS-036	CFISS-037	CFISS-037
				Sample Date:	7/12/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5
				Sample Designation:	CFISS-033-SO-0.5-2	CFISS-034-SO-0-0.5	CFISS-034-SO-0.5-2	CFISS-035-SO-0-0.5	CFISS-035-SO-0.5-2	CFISS-036-SO-0-0.5	CFISS-036-SO-0.5-2	CFISS-037-SO-0-0.5	CFISS-037-SO-0-0.5Pb
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aluminum	**7700**	110000	3000	mg/kg	**14600**	**29900**	**20300**	**20100**	**15800**	**15100**	**23100**	**17200**	NA
Antimony	**3.1**	47	0.035	mg/kg	0.43 J-	2 J-	0.22 J-	0.16 J-	0.15 J-	0.24 J-	0.18 J-	**4.4 J-**	NA
Arsenic	**0.68**	3	0.0015	mg/kg	**5.1**	**6.2**	**5.3**	**4.8**	**5.6**	**5.3**	**4.7**	**19.6**	NA
Barium	1500	22000	16	mg/kg	128 J+	286 J+	121 J+	194 J+	123 J+	156	302	190	NA
Beryllium	16	230	1.9	mg/kg	0.59	1.4	0.82	0.87	0.75	0.48 J	0.65	0.61	NA
Cadmium	7.1	98	0.069	mg/kg	0.28 J	0.31 J	0.12 J	0.26 J	0.1 J	0.26 J	0.18 J	0.68 J	NA
Calcium	--	--	--	mg/kg	19900	9730	23400	15000	23700	16200	7350	32500	NA
Chromium	--	--	--	mg/kg	14.1	16.7	16.7	14.5	14.9	15.6	13.9	35.9	NA
Cobalt	**2.3**	35	0.027	mg/kg	**6.4**	**6.5**	**5.7**	**6**	**6.1**	**6.8**	**6.7**	**10.5**	NA
Copper	**310**	4700	2.8	mg/kg	16.9	23.1	16.9	22.3	16.9	26.1	17.7	**477**	NA
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.15	0.5	0.68	0.49	0.51	0.13	0.11	0.45	NA
Iron	**5500**	82000	35	mg/kg	**16400**	**17500**	**15200**	**15900**	**15700**	**17500**	**17600**	**40700**	NA
Lead	**400**	800	--	mg/kg	12.1	50	11.3	15.8	10.3	19.8	12.4	88.3	68 J
Magnesium	--	--	--	mg/kg	11300	10500	11300	10400	11700	8140	6830	9120	NA
Manganese	**180**	2600	2.8	mg/kg	**431**	**425**	**363**	**403**	**415**	**558**	**686**	**634**	NA
Mercury	1.1	4.6	0.0033	mg/kg	0.014 U	0.017 U	0.016 U	0.026 J	0.058 J	0.016 UJ	0.015 UJ	0.034 J-	NA
Nickel	150	2200	2.6	mg/kg	17.1	21.6	17.5	18.1	14.9	19.9	14.2	46.4	NA
Potassium	--	--	--	mg/kg	921	1830	1880	1220	1260	873	1010	1430	NA
Selenium	39	580	0.052	mg/kg	1.8 J	2.5 J	1.6 J	1.8 J	1.9 J	1.1 J	1.1 J	1.2 J	NA
Silver	39	580	0.08	mg/kg	0.033 J	0.25 J	0.038 J	0.054 J	0.037 J	0.066 J	0.042 J	0.69 J	NA
Sodium	--	--	--	mg/kg	233 J	1360	3350	166 J	471	92.2 J	106 J	364	NA
Thallium	**0.078**	1.2	0.0014	mg/kg	**0.079 J**	**0.22 J**	**0.11 J**	**0.11 J**	**0.094 J**	**0.099 J+**	**0.14 J+**	**0.17 J+**	NA
Vanadium	**39**	580	8.6	mg/kg	12.6	19.8	15.1	13.5	13.6	13.4	17.2	27.6	NA
Zinc	2300	35000	37	mg/kg	52	72.3	44.8	63	47.6	76.8 J	65 J	888 J	NA

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFISS-037	CFISS-038	CFISS-038	CFISS-039	CFISS-039	CFISS-040	CFISS-040	CFISS-040	CFISS-041	CFISS-041
					Sample Date:	7/15/2016	7/14/2016	7/14/2016	7/14/2016	7/14/2016	7/13/2016	7/13/2016	7/13/2016	7/16/2016	7/16/2016
					Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
					Sample Designation:	CFISS-037-SO-0.5-2	CFISS-038-S0-0-0.5	CFISS-038-S0-0.5-2	CFISS-039-S0-0-0.5	CFISS-039-S0-0.5-2	CFISS-040-S0-0-0.5	CFISS-040-S0-0-0.5Pb	CFISS-040-S0-0.5-2	CFISS-41-SO-0-0.5	CFISS-41-SO-0.5-2
Aluminum	**7700**	110000	3000	mg/kg		**18400**	**26800**	**14900**	**14900**	**23000**	**22000**	NA	**15000**	**15500**	**21200**
Antimony	**3.1**	47	0.035	mg/kg		0.87 J-	**8.6 J-**	0.48 J-	0.11 J-	0.82 J-	0.54 J-	NA	0.14 J-	0.53 J-	0.25 J-
Arsenic	**0.68**	3	0.0015	mg/kg		**8.2**	**31.3**	**6.2**	**4.5**	**6.2**	**5.7**	NA	**4.4**	**5.9**	**5.2**
Barium	1500	22000	16	mg/kg		230	221	158	158	116	120	NA	139	117	270
Beryllium	16	230	1.9	mg/kg		0.64	0.97	0.59	0.6	0.79	0.75	NA	0.55 J	0.51 J	0.71
Cadmium	7.1	98	0.069	mg/kg		0.23 J	0.82 J	0.3 J	0.082 J	0.46 J	0.63 J	NA	0.12 J	0.51 J	0.17 J
Calcium	--	--	--	mg/kg		11500	45700	23200	13200	23600	23500	NA	12100	15600	10200
Chromium	--	--	--	mg/kg		23	36.8	17.4	12.9	20.5	28.9	NA	27.6	20.4	15.2
Cobalt	**2.3**	35	0.027	mg/kg		**6.8**	**13.5**	**6**	**6.3**	**6.2**	**6.5**	NA	**6.4**	**7.1**	**6.6**
Copper	**310**	4700	2.8	mg/kg		73.1	**887**	47.7	15.8	42.9	29.9	NA	15.4	45.7	30.7
Cyanide, Total	**2.3**	15	0.0015	mg/kg		0.35	0.021 J	0.73	0.048 J	0.29	0.23	NA	0.082 J	0.19	0.14
Iron	**5500**	82000	35	mg/kg		**20200**	**66700**	**16700**	**16100**	**17400**	**17700**	NA	**16500**	**19400**	**18400**
Lead	**400**	800	--	mg/kg		23.2	144	29.3	12	52.6	45.4	33.4 J	14.1	36.1	14.8
Magnesium	--	--	--	mg/kg		8190	8830	9630	8960	8670	10500	NA	9410	7680	7480
Manganese	**180**	2600	2.8	mg/kg		**564**	**731**	**474**	**480**	**364**	**405**	NA	**451**	**523**	**658**
Mercury	1.1	4.6	0.0033	mg/kg		0.019 J-	0.015 UJ	0.016 UJ	0.013 J-	0.017 UJ	0.017 UJ	NA	0.016 UJ	0.016 UJ	0.017 UJ
Nickel	150	2200	2.6	mg/kg		20.1	51.6	18.4	13.4	35.3	42.8	NA	22.5	31.1	15.3
Potassium	--	--	--	mg/kg		1100	2110	1040	875	1540	1750	NA	1110	990	1010
Selenium	39	580	0.052	mg/kg		1.1 J	1.1 J	1.1 J	1.1 J	0.95 J	1.1 J	NA	0.97 J	1.1 J	1.1 J
Silver	39	580	0.08	mg/kg		0.17 J	1.3	0.27 J	0.036 J	0.26 J	0.55 J	NA	0.029 J	0.12 J	0.059 J
Sodium	--	--	--	mg/kg		226 J	1970	352	143 J	1420	1240	NA	195 J	136 J	175 J
Thallium	**0.078**	1.2	0.0014	mg/kg		**0.12 J+**	**0.22 J+**	**0.11 J+**	**0.087 J+**	**0.12 J+**	**0.13 J+**	NA	**0.091 J+**	**0.096 J+**	**0.11 J+**
Vanadium	**39**	580	8.6	mg/kg		17.1	38.6	12.7	12.3	18.8	20.1	NA	13.5	13.9	17.1
Zinc	2300	35000	37	mg/kg		204 J	1720 J	123 J	48.2 J	145 J	101 J	NA	50.9 J	137 J	92.1 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA HQ MDEQ Review

Table L9. Metals in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-042	CFISS-042	CFISS-043	CFISS-043
				Sample Date:	7/18/2016	7/18/2016	7/18/2016	7/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-042-SO-0-0.5	CFISS-042-SO-0.5-2	CFISS-043-SO-0-0.5	CFISS-043-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units				
Aluminum	**7700**	110000	3000	mg/kg	**24100**	**18500**	**32300**	**17300**
Antimony	**3.1**	47	0.035	mg/kg	**3.6 J-**	0.13 J-	1.3 J-	0.15 J-
Arsenic	**0.68**	3	0.0015	mg/kg	**14.9**	**4.4**	**7.2**	**4.1**
Barium	1500	22000	16	mg/kg	153	256	136	206
Beryllium	16	230	1.9	mg/kg	1 J	0.79 J	0.98 J	0.84 J
Cadmium	7.1	98	0.069	mg/kg	0.89 J	0.23 J	0.53 J	0.19 J
Calcium	--	--	--	mg/kg	28800	18300	22200	18500
Chromium	--	--	--	mg/kg	29.5	15.2	23.8	19.7
Cobalt	**2.3**	35	0.027	mg/kg	**7.5**	**6.2**	**6.4**	**6**
Copper	**310**	4700	2.8	mg/kg	**345**	20.7	104	29.3
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.03 J	0.26	0.27	0.13
Iron	**5500**	82000	35	mg/kg	**30300**	**15800**	**20000**	**14800**
Lead	**400**	800	--	mg/kg	83.1	17.1	46.2	15.5
Magnesium	--	--	--	mg/kg	7240	7610	8210	9150
Manganese	**180**	2600	2.8	mg/kg	**470**	**654**	**422**	**560**
Mercury	1.1	4.6	0.0033	mg/kg	0.021 J	0.026 J	0.023 J	0.027 J
Nickel	150	2200	2.6	mg/kg	55.7	16.5	44.7	20.4
Potassium	--	--	--	mg/kg	1530	974	1510	1030
Selenium	39	580	0.052	mg/kg	0.86 J	0.82 J	0.73 J	0.8 J
Silver	39	580	0.08	mg/kg	0.69 J	0.13 J	1.1 J	0.086 J
Sodium	--	--	--	mg/kg	2470	339	2100	537
Thallium	**0.078**	1.2	0.0014	mg/kg	**0.14 J**	**0.098 J**	**0.14 J**	**0.09 J**
Vanadium	**39**	580	8.6	mg/kg	21.5	15	20.9	13.6
Zinc	2300	35000	37	mg/kg	751 J+	69.7 J+	284 J+	69.9 J+

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA & MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-001	CFISS-001	CFISS-002	CFISS-002	CFISS-002	CFISS-002	CFISS-003	CFISS-003	CFISS-004
			Sample Date:		6/14/2016	6/14/2016	6/14/2016	6/14/2016	7/19/2016	7/19/2016	6/15/2016	6/15/2016	6/15/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:		CFISS-001-SO-0-0.5	CFISS-001-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-003-SO-0-0.5	CFISS-003-SO-0.5-2	CFISS-004-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0099 U	0.01 U	0.01 U	0.01 U	0.0087 U	0.009 U	0.0099 U	0.0097 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0099 U	0.01 U	0.01 U	0.01 U	0.0087 U	0.009 U	0.0099 U	0.0097 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0099 U	0.01 U	0.01 U	0.01 U	0.0087 U	0.009 U	0.0099 U	0.0097 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0099 U	0.01 U	0.01 U	0.01 U	0.0087 U	0.009 U	0.0099 U	0.0097 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0099 U	0.01 U	0.01 U	0.01 U	0.0087 U	0.009 U	0.0099 U	0.0097 U	0.01 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0093 U	0.01 U	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0093 U	0.01 U	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0093 U	0.01 U	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0093 U	0.01 U	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0093 U	0.01 U	0.01 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-004	CFISS-005	CFISS-005	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-007
			Sample Date:		6/15/2016	6/16/2016	6/16/2016	6/17/2016	6/17/2016	6/17/2016	7/19/2016	7/19/2016	7/19/2016	6/17/2016
			Sample Depth (ft-bls):		0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:		CFISS-004-SO-0.5-2	CFISS-005-SO-0-0.5	CFISS-005-SO-0.5-2	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-007-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.0099 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0089 U	0.009 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.0099 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0089 U	0.009 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.0099 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0089 U	0.009 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.0099 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0089 U	0.009 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.0099 U	0.0099 U	0.01 U	0.01 U	0.01 U	0.009 U	0.0089 U	0.009 U	0.01 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0093 U	0.0092 U	0.0093 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0093 U	0.0092 U	0.0093 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0093 U	0.0092 U	0.0093 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0093 U	0.0092 U	0.0093 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.0093 U	0.0092 U	0.0093 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-007	CFISS-008	CFISS-008	CFISS-008	CFISS-008	CFISS-009	CFISS-009	CFISS-010	CFISS-010
				Sample Date:	6/17/2016	6/18/2016	6/18/2016	7/26/2016	7/26/2016	6/22/2016	6/22/2016	6/22/2016	6/22/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-007-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-009-SO-0-0.5	CFISS-009-SO-0.5-2	CFISS-010-SO-0-0.5	CFISS-010-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0098 U	0.0099 U	0.0095 U	0.009 U	0.0088 U	0.01 U	0.01 U	0.0099 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0098 U	0.0099 U	0.0095 U	0.009 U	0.0088 U	0.01 U	0.01 U	0.0099 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0098 U	0.0099 U	0.0095 U	0.009 U	0.0088 U	0.01 U	0.01 U	0.0099 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0098 U	0.0099 U	0.0095 U	0.009 U	0.0088 U	0.01 U	0.01 U	0.0099 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0098 U	0.0099 U	0.0095 U	0.009 U	0.0088 U	0.01 U	0.01 U	0.0099 U	0.01 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.057 J	0.01 U	0.0099 U	0.0093 U	0.0091 U	0.011 U	0.01 U	0.01 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U	0.0099 U	0.0093 U	0.0091 U	0.011 U	0.01 U	0.01 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U	0.0099 U	0.0093 U	0.0091 U	0.011 U	0.01 U	0.01 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U	0.0099 U	0.0093 U	0.0091 U	0.011 U	0.01 U	0.01 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.057 J	0.01 U	0.0099 U	0.0093 U	0.0091 U	0.011 U	0.01 U	0.01 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-011	CFISS-011	CFISS-012	CFISS-012	CFISS-013	CFISS-013	CFISS-014	CFISS-014	CFISS-015
				Sample Date:	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/20/2016	6/20/2016	6/20/2016	6/20/2016	6/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
				Sample Designation:	CFISS-011-SO-0-0.5	CFISS-011-SO-0.5-2	CFISS-012-SO-0-0.5	CFISS-012-SO-0.5-2	CFISS-013-SO-0-0.5	CFISS-013-SO-0.5-2	CFISS-014-SO-0-0.5	CFISS-014-SO-0.5-2	CFISS-015-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0097 U	0.0099 U	0.0096 U	0.0096 U	0.0095 U	0.0096 U	0.0096 U	0.0095 U	0.0099 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0097 U	0.0099 U	0.0096 U	0.0096 U	0.0095 U	0.0096 U	0.0096 U	0.0095 U	0.0099 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0097 U	0.0099 U	0.0096 U	0.0096 U	0.0095 U	0.0096 U	0.0096 U	0.0095 U	0.0099 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0097 U	0.0099 U	0.0096 U	0.0096 U	0.0095 U	0.0096 U	0.0096 U	0.0095 U	0.0099 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0097 U	0.0099 U	0.0096 U	0.0096 U	0.0095 U	0.0096 U	0.0096 U	0.0095 U	0.0099 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.01 U	0.01 U	0.0099 U	0.0099 U	**0.21**	0.07 J	0.01 U	0.0098 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U	0.0099 U	0.0099 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.01 U	0.0099 U	0.0099 U	0.21	0.07 J	0.01 U	0.0098 U	0.01 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-015	CFISS-016	CFISS-016	CFISS-017	CFISS-017	CFISS-018	CFISS-018	CFISS-019	CFISS-019
				Sample Date:	6/18/2016	6/23/2016	6/28/2016	6/23/2016	6/29/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-015-SO-0.5-2	CFISS-016-SO-0-0.5	CFISS-016-SO-0.5-2	CFISS-017-SO-0.5-2	CFISS-017-SO-0-0.5	CFISS-018-SO-0-0.5	CFISS-018-SO-0.5-2	CFISS-019-SO-0-0.5	CFISS-019-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.0086 U	0.0085 U	0.0085 U	0.0088 U	0.0087 U	0.0087 U	0.0089 U	0.0088 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.0086 U	0.0085 U	0.0085 U	0.0088 U	0.0087 U	0.0087 U	0.0089 U	0.0088 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.0086 U	0.0085 U	0.0085 U	0.0088 U	0.0087 U	0.0087 U	0.0089 U	0.0088 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.0086 U	0.0085 U	0.0085 U	0.0088 U	0.0087 U	0.0087 U	0.0089 U	0.0088 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.0086 U	0.0085 U	0.0085 U	0.0088 U	0.0087 U	0.0087 U	0.0089 U	0.0088 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.01 U	0.0089 U	0.0088 U	0.0088 U	0.0091 U	0.009 U	0.0089 U	0.0092 U	0.0091 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.0089 U	0.0088 U	0.0088 U	0.0091 U	0.009 U	0.0089 U	0.0092 U	0.0091 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.0089 U	0.0088 U	0.0088 U	0.0091 U	0.009 U	0.0089 U	0.0092 U	0.0091 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.0089 U	0.0088 U	0.0088 U	0.0091 U	0.009 U	0.0089 U	0.0092 U	0.0091 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.0089 U	0.0088 U	0.0088 U	0.0091 U	0.009 U	0.0089 U	0.0092 U	0.0091 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-020	CFISS-020	CFISS-020	CFISS-021	CFISS-021	CFISS-022	CFISS-022	CFISS-023	CFISS-023	CFISS-024
			Sample Date:		6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/29/2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:		CFISS-020-SO-0-0.5	CFISS-DUP2-SO	CFISS-020-SO-0.5-2	CFISS-021-SO-0-0.5	CFISS-021-SO-0.5-2	CFISS-022-SO-0-0.5	CFISS-022-SO-0.5-2	CFISS-023-SO-0-0.5	CFISS-023-SO-0.5-2	CFISS-024-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0088 U	0.0088 U	0.0087 U	0.0088 U	0.009 U	0.0088 U	0.009 U	0.0087 U	0.0089 U	0.0086 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0088 U	0.0088 U	0.0087 U	0.0088 U	0.009 U	0.0088 U	0.009 U	0.0087 U	0.0089 U	0.0086 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0088 U	0.0088 U	0.0087 U	0.0088 U	0.009 U	0.0088 U	0.009 U	0.0087 U	0.0089 U	0.0086 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0088 U	0.0088 U	0.0087 U	0.0088 U	0.009 U	0.0088 U	0.009 U	0.0087 U	0.0089 U	0.0086 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0088 U	0.0088 U	0.0087 U	0.0088 U	0.009 U	0.0088 U	0.009 U	0.0087 U	0.0089 U	0.0086 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.079 J	0.0091 UJ	**0.16**	0.0091 U	0.0093 U	0.06 J	0.0093 U	0.009 U	0.0092 U	0.0089 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0091 U	0.0091 U	0.009 U	0.0091 U	0.0093 U	0.0091 U	0.0093 U	0.009 U	0.0092 U	0.0089 U
Aroclor 1268	--	--	--	mg/kg	0.0091 U	0.0091 U	0.009 U	0.0091 U	0.0093 U	0.0091 U	0.0093 U	0.009 U	0.0092 U	0.0089 U
Aroclor-1262	--	--	--	mg/kg	0.0091 U	0.0091 U	0.009 U	0.0091 U	0.0093 U	0.0091 U	0.0093 U	0.009 U	0.0092 U	0.0089 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.079 J	0.0091 UJ	0.16	0.0091 U	0.0093 U	0.06 J	0.0093 U	0.009 U	0.0092 U	0.0089 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-024	CFISS-025	CFISS-025	CFISS-026	CFISS-026	CFISS-027	CFISS-027	CFISS-027	CFISS-028	CFISS-028
				Sample Date:	6/29/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-024-SO-0.5-2	CFISS-025-SO-0-0.5	CFISS-025-SO-0.5-2	CFISS-026-SO-0-0.5	CFISS-026-SO-0.5-2	CFISS-027-SO-0-0.5	CFISS-DUP3-SO	CFISS-027-SO-0.5-2	CFISS-028-SO-0-0.5	CFISS-028-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.0087 U	0.0089 U	0.0091 U	0.000089 UJ	0.0089 U	0.0088 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.0087 U	0.0089 U	0.0091 U	0.000089 UJ	0.0089 U	0.0088 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.0087 U	0.0089 U	0.0091 U	0.000089 UJ	0.0089 U	0.0088 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.0087 U	0.0089 U	0.0091 U	0.000089 U	0.0089 U	0.0088 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.0087 U	0.0089 U	0.0091 U	0.000089 U	0.0089 U	0.0088 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.009 U	0.0092 U	0.0094 U	0.000092 U	0.0092 U	0.0091 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.009 U	0.0092 U	0.0094 U	0.000092 U	0.0092 U	0.0091 U
Aroclor 1268	--	--	--	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.009 U	0.0092 U	0.0094 U	0.000092 U	0.0092 U	0.0091 U
Aroclor-1262	--	--	--	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.009 U	0.0092 U	0.0094 U	0.000092 U	0.0092 U	0.0091 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.009 U	0.0092 U	0.0094 U	0.000092 UJ	0.0092 U	0.0091 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-029	CFISS-029	CFISS-030	CFISS-030	CFISS-031	CFISS-031	CFISS-032	CFISS-032	CFISS-033
				Sample Date:	6/27/2016	6/27/2016	7/25/2016	7/25/2016	7/13/2016	7/13/2016	7/12/2016	7/12/2016	7/12/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
				Sample Designation:	CFISS-029-SO-0-0.5	CFISS-029-SO-0.5-2	CFISS-030-SO-0-0.5	CFISS-030-SO-0.5-2	CFISS-031-S0-0-0.5	CFISS-031-S0-0.5-2	CFISS-032-SO-0-0.5	CFISS-032-SO-0.5-2	CFISS-033-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.009 U	0.009 U	0.0088 U	0.0088 U	0.0087 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.009 U	0.009 U	0.0088 U	0.0088 U	0.0087 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.009 U	0.009 U	0.0088 U	0.0088 U	0.0087 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.009 U	0.009 U	0.0088 U	0.0088 U	0.0087 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0086 U	0.0087 U	0.0087 U	0.0088 U	0.009 U	0.009 U	0.0088 U	0.0088 U	0.0087 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.0094 U	0.0093 U	0.0091 U	0.0091 U	0.009 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.0094 U	0.0093 U	0.0091 U	0.0091 U	0.009 U
Aroclor 1268	--	--	--	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.0094 U	0.0093 U	0.0091 U	0.0091 U	0.009 U
Aroclor-1262	--	--	--	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.0094 U	0.0093 U	0.0091 U	0.0091 U	0.009 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0089 U	0.009 U	0.009 U	0.0091 U	0.0094 U	0.0093 U	0.0091 U	0.0091 U	0.009 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-033	CFISS-034	CFISS-034	CFISS-035	CFISS-035	CFISS-036	CFISS-036	CFISS-037	CFISS-037
				Sample Date:	7/12/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-033-SO-0.5-2	CFISS-034-SO-0-0.5	CFISS-034-SO-0.5-2	CFISS-035-SO-0-0.5	CFISS-035-SO-0.5-2	CFISS-036-SO-0-0.5	CFISS-036-SO-0.5-2	CFISS-037-SO-0-0.5	CFISS-037-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0089 U	0.0089 U	0.0087 U	0.0086 U	0.0088 U	0.0089 U	0.0094 U	0.0086 U	0.0091 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0089 U	0.0089 U	0.0087 U	0.0086 U	0.0088 U	0.0089 U	0.0094 U	0.0086 U	0.0091 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0089 U	0.0089 U	0.0087 U	0.0086 U	0.0088 U	0.0089 U	0.0094 U	0.0086 U	0.0091 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0089 U	0.0089 U	0.0087 U	0.0086 U	0.0088 U	0.0089 U	0.0094 U	0.0086 U	0.0091 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0089 U	0.0089 U	0.0087 U	0.0086 U	0.0088 U	0.0089 U	0.0094 U	0.0086 U	0.0091 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.0092 U	0.0092 U	0.009 U	0.0089 U	0.0091 U	0.0092 U	0.0098 U	0.0089 U	0.0094 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0092 U	0.0092 U	0.009 U	0.0089 U	0.0091 U	0.0092 U	0.0098 U	0.0089 U	0.0094 U
Aroclor 1268	--	--	--	mg/kg	0.0092 U	0.0092 U	0.009 U	0.0089 U	0.0091 U	0.0092 U	0.0098 U	0.0089 U	0.0094 U
Aroclor-1262	--	--	--	mg/kg	0.0092 U	0.0092 U	0.009 U	0.0089 U	0.0091 U	0.0092 U	0.0098 U	0.0089 U	0.0094 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0092 U	0.0092 U	0.009 U	0.0089 U	0.0091 U	0.0092 U	0.0098 U	0.0089 U	0.0094 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-038	CFISS-038	CFISS-039	CFISS-039	CFISS-040	CFISS-040	CFISS-041	CFISS-041	CFISS-042	CFISS-042
			Sample Date:		7/14/2016	7/14/2016	7/14/2016	7/14/2016	7/13/2016	7/13/2016	7/16/2016	7/16/2016	7/18/2016	7/18/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:		CFISS-038-S0-0-0.5	CFISS-038-S0-0.5-2	CFISS-039-S0-0-0.5	CFISS-039-S0-0.5-2	CFISS-040-S0-0-0.5	CFISS-040-S0-0.5-2	CFISS-41-SO-0-0.5	CFISS-41-SO-0.5-2	CFISS-042-SO-0-0.5	CFISS-042-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0087 U	0.0088 U	0.0089 U	0.009 U	0.0087 U	0.009 U	0.0088 U	0.0092 U	0.009 U	0.0089 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0087 U	0.0088 U	0.0089 U	0.009 U	0.0087 U	0.009 U	0.0088 U	0.0092 U	0.009 U	0.0089 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0087 U	0.0088 U	0.0089 U	0.009 U	0.0087 U	0.009 U	0.0088 U	0.0092 U	0.009 U	0.0089 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0087 U	0.0088 U	0.0089 U	0.009 U	0.0087 U	0.009 U	0.0088 U	0.0092 U	0.009 U	0.0089 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0087 U	0.0088 U	0.0089 U	0.009 U	0.0087 U	0.009 U	0.0088 U	0.0092 U	0.009 U	0.0089 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.009 U	0.0091 U	0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0091 U	0.0096 U	0.0093 U	0.0092 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.009 U	0.0091 U	0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0091 U	0.0096 U	0.0093 U	0.0092 U
Aroclor 1268	--	--	--	mg/kg	0.009 U	0.0091 U	0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0091 U	0.0096 U	0.0093 U	0.0092 U
Aroclor-1262	--	--	--	mg/kg	0.009 U	0.0091 U	0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0091 U	0.0096 U	0.0093 U	0.0092 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.009 U	0.0091 U	0.0092 U	0.0093 U	0.009 U	0.0093 U	0.0091 U	0.0096 U	0.0093 U	0.0092 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L10. Polychlorinated Biphenyl in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-043	CFISS-043
				Sample Date:	7/18/2016	7/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-043-SO-0-0.5	CFISS-043-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units		
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0087 U	0.009 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0087 U	0.009 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0087 U	0.009 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0087 U	0.009 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0087 U	0.009 U
Aroclor 1254	**0.12**	0.97	0.002	mg/kg	0.009 U	0.0093 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.009 U	0.0093 U
Aroclor 1268	--	--	--	mg/kg	0.009 U	0.0093 U
Aroclor-1262	--	--	--	mg/kg	0.009 U	0.0093 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.009 U	0.0093 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L11. Organochlorine Pesticides in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-001	CFISS-002	CFISS-002	CFISS-003	CFISS-004	CFISS-005	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-007
			Sample Date:	6/14/2016	6/14/2016	7/19/2016	6/15/2016	6/15/2016	6/16/2016	6/17/2016	6/17/2016	7/19/2016	7/19/2016	6/17/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFISS-001-SO-0-0.5	CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5	CFISS-003-SO-0-0.5	CFISS-004-SO-0-0.5	CFISS-005-SO-0-0.5	CFISS-006-SO-0-0.5	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-006-SO-0-0.5	CFISS-007-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.00098 U	0.00099 U	0.00086 U	0.00098 U	0.00099 U	0.00097 U	0.001 U	0.001 U	0.00089 U	0.00088 U	0.001 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.0011 U	0.00094 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.00099 U	0.00097 U	0.0011 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00077 U	0.00078 U	0.00067 U	0.00077 U	0.00077 U	0.00076 U	0.0008 U	0.0008 U	0.0007 U	0.00069 U	0.00078 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0009 U	0.00091 U	0.00079 U	0.0009 U	0.00091 U	0.0009 U	0.00094 U	0.00093 U	0.00082 U	0.00081 U	0.00092 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00068 U	0.00069 U	0.00059 U	0.00068 U	0.00068 U	0.00068 U	0.00071 U	0.0007 U	0.00062 U	0.00061 U	0.00069 U
alpha-Chlordane	--	--	--	mg/kg	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0013 U	0.0011 U	0.0011 U	0.0012 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00073 U	0.00073 U	0.00063 U	0.00072 U	0.00073 U	0.00072 U	0.00075 U	0.00075 U	0.00066 U	0.00065 U	0.00074 U
delta-BHC	--	--	--	mg/kg	0.00082 U	0.00082 U	0.00071 U	0.00081 U	0.00082 U	0.00081 U	0.00085 U	0.00084 U	0.00074 U	0.00073 U	0.00083 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.00097 U	0.00098 U	0.00085 U	0.00096 U	0.00097 U	0.00096 U	0.001 U	0.001 U	0.00088 U	0.00087 U	0.00099 U
Endosulfan I	--	--	--	mg/kg	0.001 U	0.001 U	0.0009 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.00095 U	0.00093 U	0.0011 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0012 U	0.001 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U
Endosulfan sulfate	--	--	--	mg/kg	0.00087 U	0.00088 U	0.00076 U	0.00087 U	0.00087 U	0.00086 U	0.0009 U	0.0009 U	0.00079 U	0.00078 U	0.00088 U
Endrin	1.9	25	0.0092	mg/kg	0.00095 U	0.00096 U	0.00083 U	0.00094 U	0.00095 U	0.00094 U	0.00098 U	0.00098 U	0.00086 U	0.00085 U	0.00096 U
Endrin aldehyde	--	--	--	mg/kg	0.00093 U	0.00094 U	0.00081 U	0.00092 U	0.00093 U	0.00092 U	0.00096 U	0.00096 U	0.00084 U	0.00083 U	0.00094 U
Endrin ketone	--	--	--	mg/kg	0.001 U	0.001 U	0.0009 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.00095 U	0.00093 U	0.0011 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00067 U	0.00068 U	0.00058 U	0.00067 U	0.00067 U	0.00066 U	0.0007 U	0.00069 U	0.00061 U	0.0006 U	0.00068 U
gamma-Chlordane	--	--	--	mg/kg	0.0016 U	0.0016 U	0.0014 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0017 U	0.0015 U	0.0015 U	0.0016 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00096 U	0.00097 U	0.00084 U	0.00095 U	0.00096 U	0.00095 U	0.001 U	0.00099 U	0.00087 U	0.00086 U	0.00097 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0015 U	0.0013 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0013 U	0.0013 U	0.0015 U
Methoxychlor	32	410	0.2	mg/kg	0.0016 U	0.0016 U	0.0014 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0014 U	0.0014 U	0.0016 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.022 U	0.022 U	0.019 U	0.022 U	0.022 U	0.022 U	0.023 U	0.023 U	0.02 U	0.02 U	0.022 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under Executive and NDEQ Review

Table L11. Organochlorine Pesticides in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-008	CFISS-008	CFISS-009	CFISS-010	CFISS-011	CFISS-012	CFISS-013	CFISS-014	CFISS-015	CFISS-016
			Sample Date:		6/18/2016	7/26/2016	6/22/2016	6/22/2016	6/21/2016	6/21/2016	6/20/2016	6/20/2016	6/18/2016	6/23/2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:		CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5	CFISS-009-SO-0-0.5	CFISS-010-SO-0-0.5	CFISS-011-SO-0-0.5	CFISS-012-SO-0-0.5	CFISS-013-SO-0-0.5	CFISS-014-SO-0-0.5	CFISS-015-SO-0-0.5	CFISS-016-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.00098 U	0.00089 U	0.001 U	0.00098 U	0.00096 U	0.00095 U	0.00094 U	0.00095 U	0.00098 U	0.00085 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.00098 U	0.0011 U	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.00094 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00077 U	0.0007 U	0.00079 U	0.00077 U	0.00076 U	0.00075 U	0.00073 U	0.00075 U	0.00076 U	0.00067 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0009 U	0.00082 U	0.00093 U	0.0009 U	0.00089 U	0.00087 U	0.00086 U	0.00088 U	0.0009 U	0.00079 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00068 U	0.00062 U	0.0007 U	0.00068 U	0.00067 U	0.00066 U	0.00065 U	0.00066 U	0.00068 U	0.00059 U
alpha-Chlordane	--	--	--	mg/kg	0.0012 U	0.0011 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00072 U	0.00066 U	0.00075 U	0.00072 U	0.00071 U	0.0007 U	0.00069 U	0.0007 U	0.00072 U	0.00063 U
delta-BHC	--	--	--	mg/kg	0.00081 U	0.00074 U	0.00084 U	0.00081 U	0.0008 U	0.00079 U	0.00078 U	0.00079 U	0.00081 U	0.00071 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.00097 U	0.00088 U	0.001 U	0.00097 U	0.00095 U	0.00094 U	0.00093 U	0.00094 U	0.00096 U	0.00085 U
Endosulfan I	--	--	--	mg/kg	0.001 U	0.00094 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.00099 U	0.001 U	0.001 U	0.0009 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.001 U
Endosulfan sulfate	--	--	--	mg/kg	0.00087 U	0.00079 U	0.0009 U	0.00087 U	0.00085 U	0.00084 U	0.00083 U	0.00085 U	0.00086 U	0.00076 U
Endrin	1.9	25	0.0092	mg/kg	0.00094 U	0.00086 U	0.00098 U	0.00094 U	0.00093 U	0.00092 U	0.00091 U	0.00092 U	0.00094 U	0.00083 U
Endrin aldehyde	--	--	--	mg/kg	0.00092 U	0.00084 U	0.00095 U	0.00092 U	0.00091 U	0.0009 U	0.00088 U	0.0009 U	0.00092 U	0.00081 U
Endrin ketone	--	--	--	mg/kg	0.001 U	0.00094 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.00099 U	0.001 U	0.001 U	0.0009 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00067 U	0.00061 U	0.00069 U	0.00067 U	0.00066 U	0.00065 U	0.00064 U	0.00065 U	0.00066 U	0.00058 U
gamma-Chlordane	--	--	--	mg/kg	0.0016 U	0.0015 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0015 U	0.0016 U	0.0016 U	0.0014 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00095 U	0.00087 U	0.00099 U	0.00096 U	0.00094 U	0.00093 U	0.00092 U	0.00093 U	0.00095 U	0.00084 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0013 U	0.0015 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0013 U
Methoxychlor	32	410	0.2	mg/kg	0.0016 U	0.0014 U	0.0016 U	0.0016 U	0.0016 U	0.0015 U	0.0015 U	0.0015 U	0.0016 U	0.0014 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.022 U	0.02 U	0.022 U	0.022 U	0.021 U	0.021 U	0.021 U	0.021 U	0.022 U	0.019 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under Review

Table L11. Organochlorine Pesticides in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-017	CFISS-018	CFISS-019	CFISS-020	CFISS-020	CFISS-021	CFISS-022	CFISS-023	CFISS-024	CFISS-025
			Sample Date:	6/29/2016	6/24/2016	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/27/2016	6/27/2016	6/29/2016	6/30/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFISS-017-SO-0-0.5	CFISS-018-SO-0-0.5	CFISS-019-SO-0-0.5	CFISS-020-SO-0-0.5	CFISS-DUP2-SO	CFISS-021-SO-0-0.5	CFISS-022-SO-0-0.5	CFISS-023-SO-0-0.5	CFISS-024-SO-0-0.5	CFISS-025-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.00087 U	0.00086 U	0.00088 U	0.00087 U	0.00086 U	0.00087 U	0.00087 U	0.00086 U	0.00085 U	0.00086 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.00096 U	0.00094 U	0.00097 U	0.00096 U	0.00094 U	0.00096 U	0.00096 U	0.00095 U	0.00094 U	0.00095 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00069 U	0.00067 U	0.00069 U	0.00068 U	0.00067 U	0.00068 U	0.00068 U	0.00068 U	0.00067 U	0.00067 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0008 U	0.00079 U	0.00081 U	0.0008 U	0.00079 U	0.0008 U	0.0008 U	0.00079 U	0.00078 U	0.00079 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00061 U	0.00059 U	0.00061 U	0.0006 U	0.00059 U	0.0006 U	0.0006 U	0.0006 U	0.00059 U	0.0006 U
alpha-Chlordane	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00065 U	0.00063 U	0.00065 U	0.00064 U	0.00063 U	0.00064 U	0.00064 U	0.00064 U	0.00063 U	0.00063 U
delta-BHC	--	--	--	mg/kg	0.00072 U	0.00071 U	0.00073 U	0.00072 U	0.00071 U	0.00072 U	0.00072 U	0.00071 U	0.0007 U	0.00071 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.00086 U	0.00085 U	0.00087 U	0.00086 U	0.00085 U	0.00086 U	0.00086 U	0.00085 U	0.00084 U	0.00085 U
Endosulfan I	--	--	--	mg/kg	0.00092 U	0.00091 U	0.00093 U	0.00092 U	0.0009 U	0.00092 U	0.00092 U	0.00091 U	0.0009 U	0.00091 U
Endosulfan II	--	--	--	mg/kg	0.001 U	0.001 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Endosulfan sulfate	--	--	--	mg/kg	0.00077 U	0.00076 U	0.00078 U	0.00077 U	0.00076 U	0.00077 U	0.00077 U	0.00076 U	0.00075 U	0.00076 U
Endrin	1.9	25	0.0092	mg/kg	0.00084 U	0.00083 U	0.00085 U	0.00084 U	0.00083 U	0.00084 U	0.00084 U	0.00083 U	0.00082 U	0.00083 U
Endrin aldehyde	--	--	--	mg/kg	0.00082 U	0.00081 U	0.00083 U	0.00082 U	0.00081 U	0.00082 U	0.00082 U	0.00081 U	0.0008 U	0.00081 U
Endrin ketone	--	--	--	mg/kg	0.00092 U	0.00091 U	0.00093 U	0.00092 U	0.0009 U	0.00092 U	0.00092 U	0.00091 U	0.0009 U	0.00091 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.0006 U	0.00058 U	0.0006 U	0.00059 U	0.00058 U	0.00059 U	0.00059 U	0.00059 U	0.00058 U	0.00059 U
gamma-Chlordane	--	--	--	mg/kg	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00085 U	0.00084 U	0.00086 U	0.00085 U	0.00084 U	0.00085 U	0.00085 U	0.00084 U	0.00083 U	0.00084 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U
Methoxychlor	32	410	0.2	mg/kg	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under Engineer Review

Table L11. Organochlorine Pesticides in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFISS-026	CFISS-027	CFISS-027	CFISS-028	CFISS-029	CFISS-030	CFISS-031	CFISS-032	CFISS-033	CFISS-034	CFISS-035
			Sample Date:	6/30/2016	7/1/2016	7/1/2016	7/1/2016	6/27/2016	7/25/2016	7/13/2016	7/12/2016	7/12/2016	7/11/2016	7/11/2016
			Sample Depth (ft-bls):	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:	CFISS-026-SO-0-0.5	CFISS-027-SO-0-0.5	CFISS-DUP3-SO	CFISS-028-SO-0-0.5	CFISS-029-SO-0-0.5	CFISS-030-SO-0-0.5	CFISS-031-S0-0-0.5	CFISS-032-SO-0-0.5	CFISS-033-SO-0-0.5	CFISS-034-SO-0-0.5	CFISS-035-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.00087 U	0.00088 U	0.0009 U	0.00088 U	0.00085 U	0.00086 U	0.00089 U	0.00087 U	0.00086 U	0.00088 U	0.00085 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.00096 U	0.00097 U	0.00099 U	0.00097 U	0.00093 U	0.00095 U	0.00099 U	0.00096 U	0.00095 U	0.00097 U	0.00094 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00068 U	0.00069 U	0.00071 U	0.00069 U	0.00066 U	0.00067 U	0.0007 U	0.00068 U	0.00067 U	0.00069 U	0.00067 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0008 U	0.00081 U	0.00083 U	0.00081 U	0.00078 U	0.00079 U	0.00082 U	0.0008 U	0.00079 U	0.00081 U	0.00078 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.0006 U	0.00061 U	0.00062 U	0.00061 U	0.00059 U	0.00059 U	0.00062 U	0.0006 U	0.0006 U	0.00061 U	0.00059 U
alpha-Chlordane	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00064 U	0.00065 U	0.00066 U	0.00065 U	0.00063 U	0.00063 U	0.00066 U	0.00064 U	0.00063 U	0.00065 U	0.00063 U
delta-BHC	--	--	--	mg/kg	0.00072 U	0.00073 U	0.00075 U	0.00073 U	0.0007 U	0.00071 U	0.00074 U	0.00072 U	0.00071 U	0.00073 U	0.00071 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.00086 U	0.00087 U	0.00089 U	0.00087 U	0.00084 U	0.00085 U	0.00088 U	0.00086 U	0.00085 U	0.00087 U	0.00084 U
Endosulfan I	--	--	--	mg/kg	0.00092 U	0.00093 U	0.00095 U	0.00093 U	0.00089 U	0.00091 U	0.00095 U	0.00092 U	0.00091 U	0.00093 U	0.0009 U
Endosulfan II	--	--	--	mg/kg	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.001 U
Endosulfan sulfate	--	--	--	mg/kg	0.00077 U	0.00078 U	0.0008 U	0.00078 U	0.00075 U	0.00076 U	0.00079 U	0.00077 U	0.00076 U	0.00078 U	0.00075 U
Endrin	1.9	25	0.0092	mg/kg	0.00084 U	0.00085 U	0.00087 U	0.00085 U	0.00082 U	0.00083 U	0.00086 U	0.00084 U	0.00083 U	0.00085 U	0.00082 U
Endrin aldehyde	--	--	--	mg/kg	0.00082 U	0.00083 U	0.00085 U	0.00083 U	0.0008 U	0.00081 U	0.00084 U	0.00082 U	0.00081 U	0.00083 U	0.0008 U
Endrin ketone	--	--	--	mg/kg	0.00092 U	0.00093 U	0.00095 U	0.00093 U	0.00089 U	0.00091 U	0.00095 U	0.00092 U	0.00091 U	0.00093 U	0.0009 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.00059 U	0.0006 U	0.00061 U	0.0006 U	0.00058 U	0.00058 U	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00058 U
gamma-Chlordane	--	--	--	mg/kg	0.0014 U	0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00085 U	0.00086 U	0.00088 U	0.00086 U	0.00083 U	0.00084 U	0.00087 U	0.00085 U	0.00084 U	0.00086 U	0.00083 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U
Methoxychlor	32	410	0.2	mg/kg	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.019 U	0.02 U	0.02 U	0.02 U	0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L11. Organochlorine Pesticides in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-036	CFISS-037	CFISS-038	CFISS-039	CFISS-040	CFISS-041	CFISS-042	CFISS-043
			Sample Date:		7/15/2016	7/15/2016	7/14/2016	7/14/2016	7/13/2016	7/16/2016	7/18/2016	7/18/2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:		CFISS-036-SO-0-0.5	CFISS-037-SO-0-0.5	CFISS-038-S0-0-0.5	CFISS-039-S0-0-0.5	CFISS-040-S0-0-0.5	CFISS-41-SO-0-0.5	CFISS-042-SO-0-0.5	CFISS-043-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.00088 U	0.00085 U	0.00086 U	0.00088 U	0.00086 U	0.00087 U	0.00089 U	0.00086 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.00097 U	0.00094 U	0.00095 U	0.00097 U	0.00095 U	0.00096 U	0.00098 U	0.00095 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00069 U	0.00067 U	0.00068 U	0.00069 U	0.00068 U	0.00069 U	0.0007 U	0.00068 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00081 U	0.00078 U	0.00079 U	0.00081 U	0.00079 U	0.0008 U	0.00082 U	0.00079 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00061 U	0.00059 U	0.0006 U	0.00061 U	0.0006 U	0.00061 U	0.00061 U	0.0006 U
alpha-Chlordane	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00065 U	0.00063 U	0.00064 U	0.00065 U	0.00064 U	0.00065 U	0.00066 U	0.00064 U
delta-BHC	--	--	--	mg/kg	0.00073 U	0.0007 U	0.00072 U	0.00073 U	0.00072 U	0.00073 U	0.00074 U	0.00072 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.00087 U	0.00084 U	0.00085 U	0.00087 U	0.00085 U	0.00086 U	0.00088 U	0.00085 U
Endosulfan I	--	--	--	mg/kg	0.00093 U	0.0009 U	0.00091 U	0.00093 U	0.00091 U	0.00092 U	0.00094 U	0.00091 U
Endosulfan II	--	--	--	mg/kg	0.0011 U	0.001 U	0.001 U	0.0011 U	0.001 U	0.001 U	0.0011 U	0.001 U
Endosulfan sulfate	--	--	--	mg/kg	0.00078 U	0.00075 U	0.00076 U	0.00078 U	0.00076 U	0.00077 U	0.00079 U	0.00076 U
Endrin	1.9	25	0.0092	mg/kg	0.00085 U	0.00082 U	0.00083 U	0.00085 U	0.00083 U	0.00084 U	0.00086 U	0.00083 U
Endrin aldehyde	--	--	--	mg/kg	0.00083 U	0.0008 U	0.00081 U	0.00083 U	0.00081 U	0.00082 U	0.00084 U	0.00081 U
Endrin ketone	--	--	--	mg/kg	0.00093 U	0.0009 U	0.00091 U	0.00093 U	0.00091 U	0.00092 U	0.00094 U	0.00091 U
gamma-BHC (Lindane	0.57	2.5	0.00024	mg/kg	0.0006 U	0.00058 U	0.00059 U	0.0006 U	0.00059 U	0.0006 U	0.0006 U	0.00059 U
gamma-Chlordane	--	--	--	mg/kg	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0014 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.00086 U	0.00083 U	0.00084 U	0.00086 U	0.00084 U	0.00085 U	0.00087 U	0.00084 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U
Methoxychlor	32	410	0.2	mg/kg	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.02 U	0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.02 U	0.019 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under Engineer and QEO Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-001	CFISS-001	CFISS-002	CFISS-002	CFISS-002	CFISS-002	CFISS-003	CFISS-003	CFISS-004	CFISS-004	CFISS-005
			Sample Date:		6/14/2016	6/14/2016	6/14/2016	6/14/2016	7/19/2016	7/19/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016	6/16/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:		CFISS-001-SO-0-0.5	CFISS-001-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0.5-2	CFISS-003-SO-0-0.5	CFISS-003-SO-0.5-2	CFISS-004-SO-0-0.5	CFISS-004-SO-0.5-2	CFISS-005-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	10.4 J	35.5 J	18.6 J	53.3 J	**976**	**647**	**680 J-**	270 J-	86.7 J-	81.4 J-	54.9 J-

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-005	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-007	CFISS-007	CFISS-008	CFISS-008
			Sample Date:		6/16/2016	6/17/2016	6/17/2016	6/17/2016	7/19/2016	7/19/2016	7/19/2016	6/17/2016	6/17/2016	6/18/2016	6/18/2016
			Sample Depth (ft-bls):		0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
			Sample Designation:		CFISS-005-SO-0.5-2	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-006-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-007-SO-0-0.5	CFISS-007-SO-0.5-2	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	61.8 J-	59	76 J-	78.1 J-	73.2	70.2	85.4	189 J-	141 J-	**328 J-**	**320 J-**

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-008	CFISS-008	CFISS-009	CFISS-009	CFISS-010	CFISS-010	CFISS-011	CFISS-011	CFISS-012	CFISS-012	CFISS-013
				Sample Date:	7/26/2016	7/26/2016	6/22/2016	6/22/2016	6/22/2016	6/22/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/20/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
				Sample Designation:	CFISS-008-SO-0-0.5	CFISS-008-SO-0.5-2	CFISS-009-SO-0-0.5	CFISS-009-SO-0.5-2	CFISS-010-SO-0-0.5	CFISS-010-SO-0.5-2	CFISS-011-SO-0-0.5	CFISS-011-SO-0.5-2	CFISS-012-SO-0-0.5	CFISS-012-SO-0.5-2	CFISS-013-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	**662 J-**	**508 J-**	21.8 J+	53.8 J+	33.8 J+	28.3 J+	41.2 J	60.9 J	45.5 J	52.9 J	254 J

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-013	CFISS-014	CFISS-014	CFISS-015	CFISS-015	CFISS-016	CFISS-016	CFISS-017	CFISS-017	CFISS-018	CFISS-018
				Sample Date:	6/20/2016	6/20/2016	6/20/2016	6/18/2016	6/18/2016	6/23/2016	6/28/2016	6/23/2016	6/29/2016	6/24/2016	6/24/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-013-SO-0.5-2	CFISS-014-SO-0-0.5	CFISS-014-SO-0.5-2	CFISS-015-SO-0-0.5	CFISS-015-SO-0.5-2	CFISS-016-SO-0-0.5	CFISS-016-SO-0.5-2	CFISS-017-SO-0.5-2	CFISS-017-SO-0-0.5	CFISS-018-SO-0-0.5	CFISS-018-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	**337 J**	**318 J**	**598 J**	**372 J-**	**379 J-**	27.6	36.8 J	28.6	36.7	72.9 J-	16.6 J-

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-019	CFISS-019	CFISS-020	CFISS-020	CFISS-020	CFISS-021	CFISS-021	CFISS-022	CFISS-022	CFISS-023	CFISS-023
				Sample Date:	6/24/2016	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-019-SO-0-0.5	CFISS-019-SO-0.5-2	CFISS-020-SO-0-0.5	CFISS-DUP2-SO	CFISS-020-SO-0.5-2	CFISS-021-SO-0-0.5	CFISS-021-SO-0.5-2	CFISS-022-SO-0-0.5	CFISS-022-SO-0.5-2	CFISS-023-SO-0-0.5	CFISS-023-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	215 J-	70.5 J-	61.2 J-	60.4 J-	36.7 J-	251 J-	136 J-	**732 J+**	282 J+	39.3 J	44.6 J

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Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-024	CFISS-024	CFISS-025	CFISS-025	CFISS-026	CFISS-026	CFISS-027	CFISS-027	CFISS-027	CFISS-028	CFISS-028
				Sample Date:	6/29/2016	6/29/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-024-SO-0-0.5	CFISS-024-SO-0.5-2	CFISS-025-SO-0-0.5	CFISS-025-SO-0.5-2	CFISS-026-SO-0-0.5	CFISS-026-SO-0.5-2	CFISS-027-SO-0-0.5	CFISS-DUP3-SO	CFISS-027-SO-0.5-2	CFISS-028-SO-0-0.5	CFISS-028-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	**592 J+**	204 J+	69.8	157 J+	**617 J+**	**632 J+**	244 J+	239 J+	**946**	183 J+	**861 J+**

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Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFISS-029	CFISS-029	CFISS-030	CFISS-030	CFISS-031	CFISS-031	CFISS-032	CFISS-032	CFISS-033	CFISS-033	CFISS-034
			Sample Date:		6/27/2016	6/27/2016	7/25/2016	7/25/2016	7/13/2016	7/13/2016	7/12/2016	7/12/2016	7/12/2016	7/12/2016	7/11/2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Sample Designation:		CFISS-029-SO-0-0.5	CFISS-029-SO-0.5-2	CFISS-030-SO-0-0.5	CFISS-030-SO-0.5-2	CFISS-031-S0-0-0.5	CFISS-031-S0-0.5-2	CFISS-032-SO-0-0.5	CFISS-032-SO-0.5-2	CFISS-033-SO-0-0.5	CFISS-033-SO-0.5-2	CFISS-034-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	39.9 J	53 J	270 J-	297 J-	**391**	96	59.3	**519**	**544**	152	301

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Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-034	CFISS-035	CFISS-035	CFISS-036	CFISS-036	CFISS-037	CFISS-037	CFISS-038	CFISS-038	CFISS-039	CFISS-039
				Sample Date:	7/11/2016	7/11/2016	7/11/2016	7/15/2016	7/15/2016	7/15/2016	7/15/2016	7/14/2016	7/14/2016	7/14/2016	7/14/2016
				Sample Depth (ft-bls):	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-034-SO-0.5-2	CFISS-035-SO-0-0.5	CFISS-035-SO-0.5-2	CFISS-036-SO-0-0.5	CFISS-036-SO-0.5-2	CFISS-037-SO-0-0.5	CFISS-037-SO-0.5-2	CFISS-038-S0-0-0.5	CFISS-038-S0-0.5-2	CFISS-039-S0-0-0.5	CFISS-039-S0-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units											
Fluoride	**310**	4700	12	mg/kg	**709**	92.8	232	56.3	87.3	83.4	87.3	**507**	207	60.9	**503**

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Preliminary - Under EPA and MDEQ Review

Table L12. General Chemistry in Incremental Soil Samples
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFISS-040	CFISS-040	CFISS-041	CFISS-041	CFISS-042	CFISS-042	CFISS-043	CFISS-043
				Sample Date:	7/13/2016	7/13/2016	7/16/2016	7/16/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016
				Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
				Sample Designation:	CFISS-040-S0-0-0.5	CFISS-040-S0-0.5-2	CFISS-41-SO-0-0.5	CFISS-41-SO-0.5-2	CFISS-042-SO-0-0.5	CFISS-042-SO-0.5-2	CFISS-043-SO-0-0.5	CFISS-043-SO-0.5-2
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units								
Fluoride	**310**	4700	12	mg/kg	**349**	136	84.3	79.1	**632**	99.2	**534**	225

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Preliminary - Under EPA and MDEQ Review

Table L13. Volatile Organic Compounds in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013	CFDS-013
				Sample Date:	4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016	7/14/2016
				Sample Depth:	2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7	12 - 14
				Sample Designation:	CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7	CFDS-013-SO-12-14
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00052 U	0.00071 U	0.0005 U	0.00023 U	0.00048 UJ	0.0065 U	0.00035 U	0.00048 U	0.00033 U	0.00033 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00023 U	0.00032 U	0.00022 U	0.00011 U	0.00021 UJ	0.0044 U	0.00016 U	0.00021 U	0.00015 U	0.00015 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.0006 U	0.00083 U	0.00058 U	0.00027 UJ	0.00055 UJ	0.0079 U	0.00041 UJ	0.00055 U	0.00038 UJ	0.00038 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00038 U	0.00053 U	0.00037 U	0.00017 U	0.00035 UJ	0.0019 U	0.00026 U	0.00035 U	0.00024 U	0.00024 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00047 U	0.00064 U	0.00045 U	0.00021 U	0.00043 UJ	0.0056 U	0.00032 U	0.00043 U	0.0003 U	0.0003 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00056 U	0.00077 U	0.00054 U	0.00025 U	0.00052 UJ	0.0079 U	0.00038 U	0.00052 U	0.00036 U	0.00036 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00015 U	0.00021 U	0.00014 U	6.8E-05 U	0.00014 UJ	0.0081 U	0.0001 U	0.00014 U	9.6E-05 UJ	9.6E-05 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00044 U	0.0006 U	0.00042 U	0.0002 U	0.0004 UJ	0.0063 U	0.0003 U	0.0004 U	0.00028 UJ	0.00028 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00065 U	0.00088 U	0.00062 U	0.00029 U	0.00059 UJ	0.0053 U	0.00044 U	0.00059 U	0.00041 UJ	0.00041 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00019 U	0.00026 U	0.00018 U	0.00065	0.00018 UJ	0.0051 U	0.00013 U	0.00018 U	0.00016 J	0.00012 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00015 U	0.00021 U	0.00014 U	6.8E-05 U	0.00014 UJ	0.0058 U	0.0001 U	0.00014 U	9.6E-05 U	9.6E-05 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00023 U	0.00032 U	0.00022 U	0.00011 U	0.00021 UJ	0.0042 U	0.00016 U	0.00021 U	0.00015 U	0.00015 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00016 U	0.00023 U	0.00016 U	7.4E-05 U	0.00015 UJ	0.0077 U	0.00011 U	0.00015 U	0.0001 UJ	0.0001 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00018 U	0.00024 U	0.00017 U	0.00016 J	0.00016 UJ	0.0077 U	0.00012 U	0.00016 U	0.00011 UJ	0.00011 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.019	0.022	0.024	0.0028 J	0.018 T	0.051 U	0.0018 J	0.0063	0.012 J+	0.0015 J
2-Hexanone	20	130	0.00088	mg/kg	0.0013 J	0.0018 U	0.0015 J	0.00058 U	0.0012 UJ	0.017 U	0.00088 U	0.0012 U	0.00082 U	0.00082 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0036 J	0.0042 U	0.0029 U	0.0014 U	0.0065 J-	0.015 U	0.0021 U	0.0028 U	0.0019 U	0.0019 U
Acetone	6100	67000	0.29	mg/kg	0.12	0.18	0.14	0.019	0.12 T	0.025 U	0.01	0.047	0.059 J+	0.012
Benzene	1.2	5.1	0.00023	mg/kg	0.00052 J	0.0011 J	0.00082 J	0.00028 J	0.00051 J-	0.0044 U	0.00027 J	0.00025 U	0.0006 J+	0.00037 J
Bromoform	19	86	0.00087	mg/kg	0.00018 U	0.00024 U	0.00017 U	8E-05 U	0.00016 UJ	0.0042 UJ	0.00012 U	0.00016 U	0.00011 U	0.00011 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00044 U	0.0006 U	0.00042 U	0.0002 UJ	0.0004 UJ	0.0042 U	0.0003 UJ	0.0004 U	0.00028 U	0.00028 U
Carbon disulfide	77	350	0.024	mg/kg	0.00059 U	0.0012 J	0.00056 UJ	0.00095 J-	0.00086 J-	0.0051 UJ	0.00068 J-	0.00054 U	0.006 J+	0.00037 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00059 U	0.00081 U	0.00056 U	0.00027 U	0.00054 UJ	0.0077 U	0.0004 U	0.00054 U	0.00038 U	0.00037 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00019 U	0.00026 U	0.00018 U	8.7E-05 U	0.00018 UJ	0.0056 U	0.00013 U	0.00018 U	0.00012 U	0.00012 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00023 U	0.00032 U	0.00022 U	0.00011 U	0.00021 UJ	0.007 U	0.00016 U	0.00021 U	0.00015 U	0.00015 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00021 U	0.00028 U	0.0002 U	9.3E-05 U	0.00019 UJ	0.0051 UJ	0.00014 U	0.00019 U	0.00013 U	0.00013 U
Chloroethane	1400	5700	0.59	mg/kg	0.00048 U	0.00066 U	0.00046 U	0.00022 U	0.00044 UJ	0.0086 U	0.00033 U	0.00044 U	0.00031 U	0.0003 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00029 U	0.00039 U	0.00028 U	0.00013 U	0.00026 UJ	0.0051 U	0.0002 U	0.00026 U	0.00018 U	0.00018 U
Chloromethane	11	46	0.0049	mg/kg	0.00052 UT	0.00071 UT	0.0005 UT	0.00023 U	0.00048 UT	0.0051 U	0.00035 U	0.00048 UT	0.00033 U	0.00033 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.0003 U	0.00041 U	0.00029 U	0.00014 U	0.00028 UJ	0.006 U	0.00021 U	0.00028 U	0.00019 U	0.00019 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00021 U	0.00028 U	0.0002 U	9.3E-05 U	0.00019 UJ	0.0037 U	0.00014 U	0.00019 U	0.00013 U	0.00013 U
Cyclohexane	650	2700	1.3	mg/kg	0.00063 U	0.00086 U	0.0006 U	0.00028 UJ	0.00058 UJ	0.006 U	0.0007 J-	0.00058 U	0.0004 U	0.001
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00052 U	0.00071 U	0.0005 U	0.00023 U	0.00048 UJ	0.0035 U	0.00035 U	0.00048 U	0.00033 U	0.00033 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00044 U	0.0006 U	0.00042 U	0.0002 U	0.0004 UJ	0.0033 U	0.0003 U	0.0004 U	0.00028 U	0.00028 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00025 U	0.00034 U	0.00024 U	0.00011 U	0.00023 UJ	0.095	0.00031 J	0.00023 U	0.00067 J+	0.00051 J
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00016 U	0.00023 U	0.00016 U	7.4E-05 U	0.00015 UJ	0.0044 U	0.00011 U	0.00015 U	0.0001 U	0.0001 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00023 U	0.00032 U	0.00022 U	0.00011 U	0.00021 UJ	0.0074 U	0.00016 U	0.00021 U	0.00015 U	0.00015 U
Methyl acetate	7800	120000	0.41	mg/kg	0.0012 U	0.0017 UJ	0.0087 J	0.0072	0.004 J+	0.013 U	0.00084 U	0.0017 J+	0.0037 J+	0.00078 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00023 U	0.00032 U	0.00022 U	0.00011 U	0.00021 UT	0.003 U	0.00016 U	0.00021 U	0.00015 U	0.00015 U
Methylcyclohexane	--	--	--	mg/kg	0.00069 U	0.00094 U	0.00066 U	0.00031 U	0.00063 UJ	0.0051 U	0.00096	0.00063 U	0.00044 U	0.0018
Methylene Chloride	35	320	0.0027	mg/kg	0.0032	0.0006 U	0.00042 U	0.0002 U	0.00084 J-	0.0049 U	0.0003 U	0.0004 U	0.00028 U	0.00028 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00015 U	0.00021 U	0.00014 U	0.00015 J	0.00014 UJ	0.48	0.0013	0.00014 U	0.0018 J+	0.0019
o-Xylene	65	280	0.019	mg/kg	0.00022 U	0.0003 U	0.00021 U	9.9E-05 U	0.0002 UJ	0.15	0.00056 J	0.0002 U	0.0017 J+	0.00072 J
Styrene	600	3500	0.13	mg/kg	0.00021 U	0.00028 U	0.0002 U	9.3E-05 U	0.00019 UJ	0.004 U	0.00014 U	0.00019 U	0.00013 U	0.00013 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00038 U	0.00053 U	0.00037 U	0.00017 U	0.00035 UJ	0.0084 U	0.00026 U	0.00035 U	0.00024 U	0.00024 U
Toluene	490	4700	0.076	mg/kg	0.00068 J	0.00095 J	0.00076 J	0.00027 J	0.00054 J-	0.0058 U	0.0012	0.00024 U	0.0014 J+	0.0021
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00054 U	0.00073 U	0.00051 U	0.00024 U	0.00049 UJ	0.0042 U	0.00036 U	0.00049 U	0.00034 U	0.00034 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00014 U	0.00019 U	0.00013 U	6.2E-05 U	0.00013 UJ	0.0044 U	9.3E-05 U	0.00013 U	8.7E-05 U	8.7E-05 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00036 U	0.00049 U	0.00034 U	0.00016 U	0.00033 UJ	0.0051 U	0.00024 U	0.00033 U	0.00023 U	0.00023 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00047 U	0.00064 U	0.00045 U	0.00021 UJ	0.00043 UJ	0.0035 U	0.00032 UJ	0.00043 U	0.0003 U	0.0003 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00054 U	0.00073 U	0.00051 U	0.00024 U	0.00049 UJ	0.0047 U	0.00036 U	0.00049 U	0.00034 U	0.00034 U

Preliminary - Under EPA and DEQ Review

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Table L14. Semivolatile Organic Compounds in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	Sample Location:	CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013	CFDS-013
					Sample Date:	4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016	7/14/2016
					Sample Depth:	2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7	12 - 14
					Sample Designation:	CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7	CFDS-013-SO-12-14
1,1'-Biphenyl	4.7	20	0.00087	mg/kg		0.19 U	0.19 U	0.082 U	0.032 U	0.41 UT	2 U	0.03 U	0.086 U	0.53 U	0.03 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg		0.17 U	0.17 U	0.072 U	0.028 U	0.36 UT	1.8 U	0.026 U	0.075 U	0.46 U	0.026 U
1,4-Dioxane	5.3	24	0.000094	mg/kg		0.6 U	0.61 U	0.26 U	0.1 U	1.3 U	6.4 U	0.095 U	0.27 U	1.7 U	0.093 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg		0.092 U	0.093 U	0.04 U	0.016 U	0.2 U	0.99 U	0.015 U	0.041 U	0.26 U	0.014 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg		0.21 U	0.21 U	0.091 U	0.036 U	0.46 UT	2.3 U	0.033 U	0.095 U	0.58 U	0.033 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg		0.22 U	0.23 U	0.096 U	0.038 U	0.48 UT	2.4 U	0.035 U	0.1 U	0.62 U	0.035 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg		0.064 U	0.064 U	0.027 U	0.011 U	0.14 UT	0.68 U	0.01 U	0.029 U	0.18 U	0.0099 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg		0.053 U	0.053 U	0.023 U	0.009 U	0.11 UT	0.57 U	0.0084 U	0.024 U	0.15 U	0.0082 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg		0.49 U	0.5 U	0.21 U	0.084 U	1.1 UT	5.3 U	0.078 U	0.22 U	1.4 U	0.077 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg		1.7 U	1.7 U	0.73 U	0.29 U	3.7 UT	18 U	0.27 UJ	0.76 U	4.7 U	0.26 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg		0.089 U	0.09 U	0.038 U	0.015 U	0.19 U	0.95 U	0.014 U	0.04 U	0.25 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg		0.12 U	0.12 U	0.051 U	0.02 U	0.26 U	1.3 U	0.019 U	0.054 U	0.33 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg		0.051 U	0.051 U	0.022 U	0.0086 U	0.11 UT	0.54 U	0.008 U	0.023 U	0.14 U	0.0079 U
2-Chlorophenol	39	580	0.0089	mg/kg		0.057 U	0.057 U	0.024 U	0.0097 U	0.12 UT	0.61 U	0.009 U	0.026 U	0.16 U	0.0089 U
2-Methylnaphthalene	24	300	0.019	mg/kg		0.22 J	0.3 J	0.079 J	0.036 J	0.45 DJT	1.3 J	0.0078 U	0.11 J	0.65 J	0.0077 U
2-Methylphenol	320	4100	0.075	mg/kg		0.098 U	0.099 U	0.042 U	0.017 U	0.21 UT	1 U	0.015 U	0.044 U	0.27 U	0.015 U
2-Nitroaniline	63	800	0.008	mg/kg		0.074 U	0.075 U	0.032 U	0.013 U	0.16 U	0.79 U	0.012 U	0.033 U	0.2 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg		0.075 U	0.076 U	0.032 U	0.013 U	0.16 UT	0.81 U	0.012 U	0.034 U	0.21 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg		0.06 U	0.06 U	0.026 U	0.01 U	0.13 U	0.64 U	0.0094 U	0.027 U	0.17 U	0.0093 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg		0.25 U	0.25 U	0.11 U	0.042 U	0.54 UT	2.7 U	0.04 U	0.11 U	0.69 U	0.039 U
3-Nitroaniline	--	--	--	mg/kg		0.067 U	0.067 U	0.029 U	0.011 U	0.14 U	0.71 U	0.01 U	0.03 U	0.18 U	0.01 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg		0.6 U	0.6 U	0.26 U	0.1 U	1.3 UT	6.4 U	0.094 UJ	0.27 U	1.7 U	0.093 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg		0.071 U	0.071 U	0.03 U	0.012 U	0.15 U	0.75 U	0.011 U	0.032 U	0.2 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg		0.097 U	0.097 U	0.041 U	0.016 U	0.21 UT	1 U	0.015 U	0.043 U	0.27 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg		0.058 U	0.058 U	0.025 U	0.0098 U	0.12 U	0.62 U	0.0091 U	0.026 U	0.16 U	0.009 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg		0.067 U	0.068 U	0.029 U	0.011 U	0.15 UT	0.72 U	0.011 U	0.03 U	0.19 U	0.01 U
4-Nitroaniline	25	110	0.0016	mg/kg		0.085 U	0.086 U	0.036 U	0.014 U	0.18 U	0.91 U	0.013 U	0.038 U	0.23 U	0.013 U
4-Nitrophenol	--	--	--	mg/kg		1.1 U	1.1 U	0.46 U	0.18 U	2.3 UT	12 U	0.17 U	0.48 U	3 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg		0.99 J	1.4 J	0.65 J	0.16 J	2.6 DJT	5.7 J	0.026 J	0.89 J	4.5 J	0.0096 J
Acenaphthylene	--	--	--	mg/kg		0.11 J	0.074 J	0.025 UJ	0.0098 U	0.12 UT	0.62 U	0.0091 U	0.026 U	0.16 U	0.009 U
Acetophenone	780	12000	0.058	mg/kg		0.049 U	0.049 U	0.021 U	0.0083 U	0.11 UT	0.52 U	0.0077 U	0.022 U	0.14 U	0.0076 U
Anthracene	1800	23000	5.8	mg/kg		2.6	4 J	1.2 J	0.48	5.1 D	22 J	0.056 J	1	10	0.033 U
Atrazine	2.4	10	0.0002	mg/kg		0.1 U	0.1 U	0.043 U	0.017 U	0.22 U	1.1 U	0.016 U	0.045 U	0.28 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg		0.17 U	0.17 U	0.073 U	0.029 U	0.37 UT	1.8 U	0.027 UJ	0.077 U	0.47 U	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg		**8.4**	**11 J**	**6.4 J**	**1.8**	**37 D**	**130**	**0.25**	**11**	**74**	0.16
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg		**7.9**	**13 J**	**7 J**	**1.6**	**38 D**	**67**	**0.35**	**16**	**80**	**0.17**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg		**14**	**18**	**11**	**2.5**	**71 D**	**160**	**0.63**	**22**	**100**	**0.26**
Benzo[g,h,i]perylene	--	--	--	mg/kg		11	12	9.3	1.8	50 D	53	0.47	22	76	0.14 J
Benzo[k]fluoranthene	**1.6**	29	0.4	mg/kg		**4.9**	**7.5 J**	**4.1 J**	1.2	**21 D**	**62**	0.13	**7.1**	**37**	0.11
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg		0.07 U	0.07 U	0.03 U	0.012 U	0.15 U	0.75 U	0.011 U	0.031 U	0.19 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg		0.053 U	0.053 U	0.023 U	0.009 U	0.11 UT	0.57 U	0.0084 U	0.024 U	0.15 U	0.0082 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg		4.1	1.7 J	1.7	0.13 J	4 DJT	0.94 U	0.014 U	0.039 U	0.24 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg		1.3 J	0.07 U	0.03 U	0.012 U	3.3 DJ	0.74 U	0.011 U	0.031 U	0.19 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg		0.16 U	0.16 U	0.069 U	0.027 U	0.35 U	1.7 U	0.025 UJ	0.073 U	0.45 U	0.025 U
Carbazole	--	--	--	mg/kg		2.7	3.3 J	1.2 J	0.46	7.8 D	32	0.066 J	1.2	7.4	0.025 J
Chrysene	**16**	290	1.2	mg/kg		**17**	**19 J**	11 J	3.2	**68 D**	**330**	0.35	16	**110**	0.25 J
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		**3.1**	**3.8**	**2.6**	**0.5**	**14 D**	**20**	**0.095**	**4.4**	**23**	**0.032 J**
Dibenzofuran	7.3	100	0.015	mg/kg		0.59 J	0.79 J	0.3 J	0.084 J	1.1 DJT	3.6 J	0.013 J	0.41 J	1.4 J	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.064 U	0.064 U	0.027 U	0.011 U	0.14 U	0.68 U	0.01 U	0.029 U	0.18 U	0.0099 U
Dimethyl phthalate	--	--	--	mg/kg		0.065 U	0.066 U	0.028 U	0.011 U	0.14 U	0.7 U	0.01 U	0.029 U	0.18 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.25 J	0.068 U	0.029 U	0.029 J	1.9 DJT	0.72 U	0.011 U	0.03 U	0.19 U	0.01 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.11 U	0.11 U	0.049 U	0.019 U	0.25 UT	1.2 U	0.018 U	0.051 U	0.32 U	0.018 U
Fluoranthene	**240**	3000	8.9	mg/kg		27	26 J	13 J	4.2	82 D	**470**	0.52	16	110	0.34 J
Fluorene	240	3000	0.54	mg/kg		1 J	1.1 J	0.5 J	0.19 J	1.7 DJT	8.2 J	0.025 J	0.4 J	4.1 J	0.012 J

Preliminary - Under EPA 2016 MDEQ Review

Table L14. Semivolatile Organic Compounds in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013	CFDS-013
			Sample Date:		4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016	7/14/2016
			Sample Depth:		2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7	12 - 14
			Sample Designation:		CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7	CFDS-013-SO-12-14
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.091 U	0.092 U	0.039 U	0.015 U	0.2 UT	0.97 U	0.014 U	0.041 U	0.25 U	0.014 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.063 U	0.064 U	0.027 U	0.011 U	0.14 UT	0.67 U	0.01 UJ	0.028 U	0.17 U	0.0098 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.14 U	0.14 U	0.06 U	0.024 U	0.3 UT	1.5 U	0.022 U	0.063 U	0.39 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.082 U	0.083 U	0.035 U	0.014 U	0.18 UT	0.88 U	0.013 U	0.037 U	0.23 U	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	**12**	**14**	**10**	**2**	**56 D**	**62**	**0.45**	**22**	**83**	0.14
Isophorone	570	2400	0.026	mg/kg	0.048 U	0.049 U	0.021 U	0.0082 U	0.1 U	0.52 U	0.0076 U	0.022 U	0.13 U	0.0075 U
Naphthalene	**3.8**	17	0.00054	mg/kg	0.6 J	1.1 J	0.2 J	0.071 J	0.96 DJT	**4.6 J**	0.009 U	0.026 U	0.5 J	0.0089 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.071 U	0.071 U	0.03 U	0.012 U	0.15 U	0.75 U	0.011 U	0.032 U	0.2 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.075 U	0.076 U	0.032 U	0.013 U	0.16 U	0.81 U	0.012 U	0.034 U	0.21 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.2 U	0.21 U	0.087 U	0.035 U	0.44 UT	2.2 U	0.032 U	0.091 U	0.56 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.27 U	0.27 U	0.12 U	0.046 U	0.59 UT	2.9 U	0.043 UJ	0.12 U	0.75 U	0.042 U
Phenanthrene	--	--	--	mg/kg	12	16 J	7.6 J	2	28 D	130	0.3 J	5.9	59	0.17 J
Phenol	1900	25000	0.33	mg/kg	0.073 U	0.074 U	0.031 U	0.012 U	0.16 UT	0.78 U	0.012 U	0.033 U	0.2 U	0.011 U
Pyrene	**180**	2300	1.3	mg/kg	18	19 J	11 J	4.5	56 D	**340**	0.48	16	120	0.36

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L15. Metals in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013	CFDS-013
				Sample Date:	4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016	7/14/2016
				Sample Depth:	2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7	12 - 14
				Sample Designation:	CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7	CFDS-013-SO-12-14
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Aluminum	**7700**	110000	3000	mg/kg	**11300**	**75200**	**96000**	**18900**	**90900**	**52600**	**9960**	**102000**	**81000**	**7810**
Antimony	**3.1**	47	0.035	mg/kg	0.41 UJ	0.67 J-	0.61 J-	0.46 U	**3.3 J-**	0.5 U	0.39 U	0.46 UJ	1.9	0.4 U
Arsenic	**0.68**	3	0.0015	mg/kg	**1.6**	**6**	**4.1**	**5.8**	**11.5**	**6.8**	**4.5**	**2.4**	**25.5**	**3.5**
Barium	1500	22000	16	mg/kg	50.5	94.6	106	86.2	99.7	128	75.1	109	80	49.8
Beryllium	16	230	1.9	mg/kg	0.43	1.5 J	2.8 J	0.74	1.3	3.4	0.7	1.4	1.4	0.43
Cadmium	7.1	98	0.069	mg/kg	0.31 J	1.1 J	0.59 J	0.35 U	2.5	1.4	0.3 U	1.1	3.4	0.3 U
Calcium	--	--	--	mg/kg	7240	8610	8030	4230	11100	27500	20600	6320	16700	35100
Chromium	--	--	--	mg/kg	6.1	27.4	22.4	14.3	40.7	26.9	7.6	13.6	23.7	9.7
Cobalt	**2.3**	35	0.027	mg/kg	**3**	**4.1**	**2.9**	**6.7**	**6.7**	**7.7**	**4.8**	**5**	**18.1**	**5.1**
Copper	310	4700	2.8	mg/kg	9.1	48.2 J	27.3 J	23.4	74.8	40.9	14.4	62.6	51.5	13.6
Cyanide, Total	**2.3**	15	0.0015	mg/kg	0.023 R	0.42 J	0.32 J	0.11 J	0.33 J	1.8 J	0.084 J	0.2	**2.4 J**	0.036 J
Iron	**5500**	82000	35	mg/kg	**6870**	**10100**	**13300**	**15800**	**21800**	**15700**	**11300**	**14900**	**20900**	**12600**
Lead	400	800	--	mg/kg	28.1	66.2 J	15.5 J	14.7	71.7	249	49	19.3	64.1	13.6
Magnesium	--	--	--	mg/kg	7000	5410 J	2880 J	8830	5360	9060	8170	3030	4170	11100
Manganese	**180**	2600	2.8	mg/kg	**338**	**194**	151	**359**	**221**	**192**	**288**	**286**	110	**300**
Mercury	1.1	4.6	0.0033	mg/kg	0.03	0.024	0.021 J	0.03	0.041	0.059	0.014 J	0.027	0.021 U	0.012 U
Nickel	**150**	2200	2.6	mg/kg	11.8	56.5	46.6	24.5	**171**	150	9.9	92.1	**754**	13.4
Potassium	--	--	--	mg/kg	499	1110	1710	944	1030	2330	1020	512	779	625
Selenium	39	580	0.052	mg/kg	0.39 UJ	0.41 UJ	0.45 UJ	0.44 U	0.89 J-	0.47 U	0.37 U	0.43 UJ	1.4 J	0.37 U
Silver	39	580	0.08	mg/kg	0.76 U	0.84 J	0.92 J	0.85 U	1.8	0.92 U	0.72 U	0.84 U	1.3 U	0.72 U
Sodium	--	--	--	mg/kg	1060	7760 J	45900 J	450	2250	1420	1890	232	1240	45.6 J
Thallium	**0.078**	1.2	0.0014	mg/kg	0.16 U	0.16 U	0.18 U	0.18 U	**0.19 J**	0.19 U	0.15 U	0.17 U	0.26 U	0.15 U
Vanadium	**39**	580	8.6	mg/kg	5.2	23.5	17.5	17.2	**57**	**64.4**	9.2	**40.6**	**221**	9.9
Zinc	2300	35000	37	mg/kg	272	685 J	254 J	88.4	408	178	56.2	174	304	32.5

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water Risk-based Soil Screening Level

Preliminary - Under EPA and VIDEQ Review

Table L16. Polychlorinated Biphenyl in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013
				Sample Date:	4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016
				Sample Depth:	2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7
				Sample Designation:	CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units									
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.012 U	0.012 U	0.013 U	0.01 U	0.013 U	0.013 U	0.0095 U	0.014 U	0.017 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.012 U	0.012 U	0.013 U	0.01 U	0.013 U	0.013 U	0.0095 U	0.014 U	0.017 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.012 U	0.012 U	0.013 U	0.01 U	0.013 U	0.013 U	0.0095 U	0.014 U	0.017 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.012 U	0.012 U	0.013 U	0.01 U	0.013 U	0.013 U	0.0095 U	0.014 U	0.017 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.012 U	0.012 U	0.013 U	0.01 U	0.013 U	0.013 U	0.0095 U	0.014 U	0.017 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.014 U	0.013 U	0.0099 U	0.014 U	0.017 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.014 U	0.013 U	0.0099 U	0.014 U	0.017 U
Aroclor 1268	--	--	--	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.014 U	0.013 U	0.0099 U	0.014 U	0.017 U
Aroclor-1262	--	--	--	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.014 U	0.013 U	0.0099 U	0.014 U	0.017 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.013 U	0.013 U	0.013 U	0.011 U	0.014 U	0.013 U	0.0099 U	0.014 U	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L16. Polychlorinated Biphenyl in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFDS-013
				Sample Date:	7/14/2016
				Sample Depth:	12 - 14
				Sample Designation:	CFDS-013-SO-12-14
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units	
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L17. Organochlorine Pesticides in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013	CFDS-013
				Sample Date:	4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016	7/14/2016
				Sample Depth:	2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7	12 - 14
				Sample Designation:	CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7	CFDS-013-SO-12-14
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.0012 U	0.0012 U	0.0013 U	0.001 U	0.0013 U	0.0013 U	0.00094 U	0.0013 U	0.0017 U	0.00093 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0013 U	0.0013 U	0.0014 U	0.0011 U	0.0014 U	0.0014 U	0.001 U	0.0015 U	0.0018 U	0.001 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00094 U	0.00095 U	0.001 U	0.00079 U	0.001 U	0.001 U	0.00074 U	0.0011 U	0.0013 U	0.00073 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.0011 U	0.0011 U	0.0012 U	0.00093 U	0.0012 U	0.0012 U	0.00087 U	0.0012 U	0.0015 U	0.00086 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00083 U	0.00084 U	0.00089 U	0.0007 U	0.0009 U	0.00089 U	0.00065 U	0.00093 U	0.0011 U	0.00065 U
alpha-Chlordane	--	--	--	mg/kg	0.0015 U	0.0015 U	0.0016 U	0.0013 U	0.0016 U	0.0016 U	0.0012 U	0.0017 U	0.002 U	0.0012 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00088 U	0.00089 U	0.00095 U	0.00075 U	0.00095 U	0.00094 U	0.0007 U	0.00099 U	0.0012 U	0.00069 U
delta-BHC	--	--	--	mg/kg	0.00099 U	0.001 U	0.0011 U	0.00084 U	0.0011 U	0.0011 U	0.00078 U	0.0011 U	0.0014 U	0.00077 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.0012 U	0.0012 U	0.0013 U	0.001 U	0.0013 U	0.0013 U	0.00093 U	0.0013 U	0.0016 U	0.00092 U
Endosulfan I	--	--	--	mg/kg	0.0013 U	0.0013 U	0.0014 U	0.0011 U	0.0014 U	0.0014 U	0.001 U	0.0014 U	0.0017 U	0.00098 U
Endosulfan II	--	--	--	mg/kg	0.0014 U	0.0014 U	0.0015 U	0.0012 U	0.0015 U	0.0015 U	0.0011 U	0.0016 U	0.002 U	0.0011 U
Endosulfan sulfate	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U	0.00084 U	0.0012 U	0.0015 U	0.00083 U
Endrin	1.9	25	0.0092	mg/kg	0.0012 U	0.0012 U	0.0012 U	0.00098 U	0.0012 U	0.0012 U	0.00091 U	0.0013 U	0.0016 U	0.0009 U
Endrin aldehyde	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0012 U	0.00095 U	0.0012 U	0.0012 U	0.00089 U	0.0013 U	0.0016 U	0.00088 U
Endrin ketone	--	--	--	mg/kg	0.0013 U	0.0013 U	0.0014 U	0.0011 U	0.0014 U	0.0014 U	0.001 U	0.0014 U	0.0017 U	0.00098 U
gamma-BHC (Lindane)	0.57	2.5	0.00024	mg/kg	0.00082 U	0.00082 U	0.00088 U	0.00069 U	0.00088 U	0.00087 U	0.00064 U	0.00092 U	0.0011 U	0.00063 U
gamma-Chlordane	--	--	--	mg/kg	0.002 U	0.002 U	0.0021 U	0.0017 U	0.0021 U	0.0021 U	0.0016 U	0.0022 U	0.0027 U	0.0015 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.0012 U	0.0012 U	0.0013 U	0.00099 U	0.0013 U	0.0012 U	0.00092 U	0.0013 U	0.0016 U	0.00091 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0018 U	0.0018 U	0.0019 U	0.0015 U	0.0019 U	0.0019 U	0.0014 U	0.002 U	0.0025 U	0.0014 U
Methoxychlor	32	410	0.2	mg/kg	0.0019 U	0.0019 U	0.0021 U	0.0016 U	0.0021 U	0.0021 U	0.0015 U	0.0022 U	0.0027 U	0.0015 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.027 U	0.027 U	0.028 U	0.022 U	0.029 U	0.028 U	0.021 U	0.03 U	0.037 U	0.021 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA MDEQ Review

Table L18. General Chemistry in Soil Samples from Drainage Structure Sampling Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFDS-003	CFDS-005	CFDS-005	CFDS-005	CFDS-007	CFDS-007	CFDS-007	CFDS-013	CFDS-013	CFDS-013
				Sample Date:	4/12/2016	4/12/2016	4/12/2016	7/15/2016	4/12/2016	7/14/2016	7/14/2016	4/15/2016	7/14/2016	7/14/2016
				Sample Depth:	2 - 3	2 - 3	2 - 3	6 - 8	3 - 4	8 - 10	16 - 18	2 - 3	5 - 7	12 - 14
				Sample Designation:	CFDS-003-SO-2-3	CFDS-005-SO-2-3	CFDS-DUP-SO-1	CFDS-005-SO-6-8	CFDS-007-SO-3-4	CFDS-007-SO-8-10	CFDS-007-SO-16-18	CFDS-013-SO-2-3	CFDS-013-SO-5-7	CFDS-013-SO-12-14
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Protection of Groundwater Risk-Based Soil RSL	Units										
Fluoride	**310**	4700	12	mg/kg	298 J	**830 J**	**869 J**	303 J+	**485 J**	**493 J+**	219 J+	238 J	**896 J+**	154 J+

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L19. Volatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location:	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-124	CFSB-124	CFSB-125
					Sample Date:	18 May 2016	18 May 2016	18 May 2016	18 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	18 May 2016
					Sample Depth (ft-bls):	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12	0.5 - 2
					Sample Designation:	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0.5-2.0
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00043 U	0.00039 U	0.00039 UJ	0.00036 U	0.00055 U	0.00035 U	0.0006 U	0.00041 U	0.00054 U	0.00033 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U	0.00015 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.0005 U	0.00045 U	0.00045 UJ	0.00042 U	0.00063 U	0.00041 U	0.0007 U	0.00048 U	0.00063 U	0.00039 U	0.00045 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00032 U	0.00028 U	0.00028 UJ	0.00027 U	0.0004 U	0.00026 U	0.00044 U	0.00031 U	0.0004 U	0.00025 U	0.00029 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00039 U	0.00035 U	0.00035 UJ	0.00033 U	0.00049 U	0.00031 U	0.00054 U	0.00037 U	0.00049 U	0.0003 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00047 U	0.00042 U	0.00042 UJ	0.00039 U	0.00059 U	0.00038 U	0.00065 U	0.00045 U	0.00059 U	0.00036 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00013 U	0.00011 U	0.00011 UJ	0.00011 U	0.00016 U	0.0001 U	0.00017 U	0.00012 U	0.00016 U	9.6E-05 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00037 U	0.00032 U	0.00033 UJ	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U	0.00028 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00054 U	0.00048 U	0.00048 UJ	0.00045 U	0.00068 U	0.00043 U	0.00074 U	0.00051 U	0.00067 U	0.00041 U	0.00048 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00016 U	0.00014 U	0.00014 UJ	0.00013 U	0.0002 U	0.00013 U	0.00022 U	0.00015 U	0.0002 U	0.00012 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00013 U	0.00011 U	0.00011 UJ	0.00011 U	0.00016 U	0.0001 U	0.00017 U	0.00012 U	0.00016 U	9.6E-05 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U	0.00015 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00014 U	0.00012 U	0.00012 UJ	0.00011 U	0.00017 U	0.00011 U	0.00019 U	0.00013 U	0.00017 U	0.00011 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00015 U	0.00013 U	0.00013 UJ	0.00012 U	0.00019 U	0.00012 U	0.00021 U	0.00014 U	0.00019 U	0.00011 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00088 U	0.00078 U	0.00078 U	0.00074 U	0.0011 U	0.00071 U	0.0012 U	0.00084 U	0.0011 U	0.00067 U	0.00079 U
2-Hexanone	20	130	0.00088	mg/kg	0.0011 U	0.00095 U	0.00095 UJ	0.0009 U	0.0014 U	0.00087 U	0.0015 U	0.001 U	0.0013 U	0.00082 U	0.00097 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0025 U	0.0023 U	0.0023 UJ	0.0021 U	0.0032 U	0.0021 U	0.0035 U	0.0024 U	0.0032 U	0.0019 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.049	0.0082	0.041	0.0066	0.012	0.0057	0.068	0.0087	0.093	0.013	0.02
Benzene	1.2	5.1	0.00023	mg/kg	0.001 J	0.00066 J	0.0002 UJ	0.00091 J	0.00029 U	0.00022 J	0.0015 J	0.00022 U	0.00082 J	0.00019 J	0.0013
Bromoform	19	86	0.00087	mg/kg	0.00015 U	0.00013 U	0.00013 U	0.00012 U	0.00019 U	0.00012 U	0.00021 U	0.00014 U	0.00019 U	0.00011 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00037 U	0.00032 U	0.00033 U	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U	0.00028 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.00049 U	0.00044 U	0.00044 UJ	0.00041 U	0.00062 U	0.0004 U	0.00068 U	0.00047 U	0.00062 U	0.00039 J	0.00044 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00049 U	0.00044 U	0.00044 UJ	0.00041 U	0.00062 U	0.0004 U	0.00068 U	0.00047 U	0.00062 U	0.00038 U	0.00044 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00016 U	0.00014 U	0.00014 UJ	0.00013 U	0.0002 U	0.00013 U	0.00022 U	0.00015 U	0.0002 U	0.00012 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U	0.00015 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00017 U	0.00015 U	0.00015 UJ	0.00014 U	0.00022 U	0.00014 U	0.00024 U	0.00016 U	0.00021 U	0.00013 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.0004 U	0.00036 U	0.00036 U	0.00034 U	0.0005 U	0.00032 U	0.00055 U	0.00038 U	0.0005 U	0.00031 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00024 U	0.00021 U	0.00021 UJ	0.0002 U	0.0003 U	0.00019 U	0.00033 U	0.00023 U	0.0003 U	0.00018 U	0.00022 U
Chloromethane	11	46	0.0049	mg/kg	0.00043 U	0.00039 U	0.00039 U	0.00036 U	0.00055 U	0.00035 U	0.0006 U	0.00041 U	0.00054 U	0.00033 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00025 U	0.00022 U	0.00022 UJ	0.00021 U	0.00032 U	0.0002 U	0.00035 U	0.00024 U	0.00031 U	0.00019 U	0.00023 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00017 U	0.00015 U	0.00015 UJ	0.00014 U	0.00022 U	0.00014 U	0.00024 U	0.00016 U	0.00021 U	0.00013 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00053 U	0.0018	0.00047 UJ	0.00044 U	0.00066 U	0.00093	0.00073 U	0.0005 U	0.00066 U	0.0004 U	0.001
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00043 U	0.00039 U	0.00039 UJ	0.00036 U	0.00055 U	0.00035 U	0.0006 U	0.00041 U	0.00054 U	0.00033 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00037 U	0.00032 U	0.00033 UJ	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U	0.00028 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00021 U	0.00067 J	0.00018 UJ	0.00098	0.00026 U	0.00025 J	0.00028 U	0.00021 J	0.00026 U	0.00016 U	0.00018 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00014 U	0.00012 U	0.00012 UJ	0.00011 U	0.00017 U	0.00011 U	0.00019 U	0.00013 U	0.00017 U	0.00011 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U	0.00015 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.001 U	0.00091 U	0.0024 J	0.00086 U	0.0013 U	0.00083 U	0.0039 J	0.00098 U	0.035	0.0096	0.00092 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00019 U	0.00017 U	0.00017 UJ	0.00016 U	0.00024 U	0.00016 U	0.00027 U	0.00019 U	0.00024 U	0.00015 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.00057 U	0.0035	0.00051 UJ	0.0055	0.00072 U	0.0011	0.00079 U	0.00075 J	0.00072 U	0.00044 U	0.0015
Methylene Chloride	35	320	0.0027	mg/kg	0.00037 U	0.00032 U	0.00033 UJ	0.00031 U	0.00046 U	0.0003 U	0.00051 U	0.00035 U	0.00046 U	0.00028 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00013 U	0.0022	0.00011 UJ	0.0032	0.00016 U	0.0008 J	0.00017 U	0.00036 J	0.00016 U	9.6E-05 U	0.00051 J
o-Xylene	65	280	0.019	mg/kg	0.00018 U	0.00072 J	0.00016 UJ	0.00093 J	0.00023 U	0.00025 J	0.00025 U	0.00017 U	0.00023 U	0.00014 U	0.00016 U
Styrene	600	3500	0.13	mg/kg	0.00017 U	0.00015 U	0.00015 UJ	0.00014 U	0.00022 U	0.00014 U	0.00024 U	0.00016 U	0.00021 U	0.00013 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00032 U	0.00028 U	0.00028 UJ	0.00027 U	0.0004 U	0.00026 U	0.00044 U	0.00031 U	0.0004 U	0.00025 U	0.00029 U
Toluene	490	4700	0.076	mg/kg	0.00024 J	0.0031	0.00019 UJ	0.0051	0.00027 U	0.001	0.0003 U	0.00068 J	0.00027 U	0.00043 J	0.0014
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00045 U	0.0004 U	0.0004 UJ	0.00037 U	0.00056 U	0.00036 U	0.00062 U	0.00043 U	0.00056 U	0.00034 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00011 U	0.0001 U	0.0001 UJ	9.6E-05 U	0.00014 U	9.2E-05 U	0.00016 U	0.00011 U	0.00014 U	8.8E-05 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.0003 U	0.00026 U	0.00026 UJ	0.00025 U	0.00037 U	0.00024 U	0.00041 U	0.00028 U	0.00037 U	0.00023 U	0.00027 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00039 U	0.00035 U	0.00035 U	0.00033 U	0.00049 U	0.00031 U	0.00054 U	0.00037 U	0.00049 U	0.0003 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00045 U	0.0004 U	0.0004 U	0.00037 U	0.00056 U	0.00036 U	0.00062 U	0.00043 U	0.00056 U	0.00034 U	0.0004 U

Preliminary Under EPA and DEQ Review

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Table L19. Volatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFSB-125	CFSB-126	CFSB-126	CFSB-127	CFSB-127
					Sample Date: 18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016
					Sample Depth (ft-bls): 10 - 12	0.5 - 2	10 - 12	0.5 - 2	10 - 12
					Sample Designation: CFSB-125-SO-10-12	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00034 U	0.00056 U	0.00039 U	0.00049 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.0004 U	0.00065 U	0.00045 U	0.00056 U	0.00045 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00025 U	0.00041 U	0.00029 U	0.00036 U	0.00028 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00031 U	0.0005 U	0.00035 U	0.00043 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00037 U	0.0006 U	0.00042 U	0.00052 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	9.9E-05 U	0.00016 U	0.00011 U	0.00014 U	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00043 U	0.00069 U	0.00049 U	0.0006 U	0.00048 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00013 U	0.00021 U	0.00014 U	0.00018 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	9.9E-05 U	0.00016 U	0.00011 U	0.00014 U	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00011 U	0.00018 U	0.00012 U	0.00015 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00012 U	0.00019 U	0.00013 U	0.00017 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0007 U	0.0011 U	0.0008 U	0.00098 U	0.00078 U
2-Hexanone	20	130	0.00088	mg/kg	0.00085 U	0.0014 U	0.00097 U	0.0012 U	0.00096 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.002 U	0.0033 U	0.0023 U	0.0028 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.017	0.05	0.022	0.042	0.022
Benzene	1.2	5.1	0.00023	mg/kg	0.00034 J	0.00035 J	0.00024 J	0.00029 J	0.0004 J
Bromoform	19	86	0.00087	mg/kg	0.00012 U	0.00019 U	0.00013 U	0.00017 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.0005 J	0.00063 U	0.00044 U	0.00055 U	0.00079 J
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00039 U	0.00063 U	0.00044 U	0.00055 U	0.00044 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00013 U	0.00021 U	0.00014 U	0.00018 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00014 U	0.00022 U	0.00016 U	0.00019 U	0.00015 U
Chloroethane	1400	5700	0.59	mg/kg	0.00032 U	0.00051 U	0.00036 U	0.00045 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00019 U	0.00031 U	0.00022 U	0.00027 U	0.00021 U
Chloromethane	11	46	0.0049	mg/kg	0.00034 U	0.00056 U	0.00039 U	0.00049 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.0002 U	0.00032 U	0.00023 U	0.00028 U	0.00022 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00014 U	0.00022 U	0.00016 U	0.00019 U	0.00015 U
Cyclohexane	650	2700	1.3	mg/kg	0.00049 J	0.00068 U	0.00048 U	0.00059 U	0.00047 J
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00034 U	0.00056 U	0.00039 U	0.00049 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00016 U	0.00026 U	0.00019 U	0.00023 U	0.00018 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00011 U	0.00018 U	0.00012 U	0.00015 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00081 U	0.002 J	0.0078	0.011	0.00092 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00015 U	0.00025 U	0.00018 U	0.00022 U	0.00017 U
Methylcyclohexane	--	--	--	mg/kg	0.00091	0.00073 U	0.00052 U	0.00064 U	0.0007 J
Methylene Chloride	35	320	0.0027	mg/kg	0.00029 U	0.00047 U	0.00033 U	0.00041 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	9.9E-05 U	0.00016 U	0.00011 U	0.00014 U	0.00011 U
o-Xylene	65	280	0.019	mg/kg	0.00014 U	0.00023 U	0.00017 U	0.0002 U	0.00016 U
Styrene	600	3500	0.13	mg/kg	0.00014 U	0.00022 U	0.00016 U	0.00019 U	0.00015 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00025 U	0.00041 U	0.00029 U	0.00036 U	0.00028 U
Toluene	490	4700	0.076	mg/kg	0.00095	0.00028 U	0.00033 J	0.00024 U	0.00053 J
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00035 U	0.00057 U	0.0004 U	0.0005 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	9E-05 U	0.00015 U	0.0001 U	0.00013 U	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00024 U	0.00038 U	0.00027 U	0.00033 U	0.00026 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00031 U	0.0005 U	0.00035 U	0.00043 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00035 U	0.00057 U	0.0004 U	0.0005 U	0.0004 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Pre-Final Under EPA and DEQ Review

Table L20. Semivolatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: / Sample Date: / Sample Depth (ft-bls): / Sample Designation: CFSB-120 18 May 2016 0 - 0.5 CFSB-120-SO-0-0.5	CFSB-120 18 May 2016 0.5 - 2 CFSB-120-SO-0.5-2.0	CFSB-120 18 May 2016 10 - 12 CFSB-120-SO-10-12	CFSB-121 18 May 2016 0 - 0.5 CFSB-121-SO-0-0.5	CFSB-121 18 May 2016 0.5 - 2 CFSB-121-SO-0.5-2.0	CFSB-121 18 May 2016 10 - 12 CFSB-121-SO-10-12	CFSB-122 19 May 2016 0 - 0.5 CFSB-122-SO-0-0.5	CFSB-122 19 May 2016 0.5 - 2 CFSB-122-SO-0.5-2.0	CFSB-122 19 May 2016 10 - 12 CFSB-122-SO-10-12	CFSB-123 19 May 2016 0 - 0.5 CFSB-123-SO-0-0.5	CFSB-123 19 May 2016 0.5 - 2 CFSB-123-SO-0.5-2.0
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.033 U	0.037 U	0.03 U	0.032 U	0.031 UJ	0.029 U	0.045 U	0.046 J	0.031 U	0.036 U	0.038 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.032 U	0.026 U	0.028 U	0.027 U	0.026 U	0.039 U	0.037 U	0.027 U	0.032 U	0.033 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.12 U	0.093 U	0.1 U	0.097 U	0.092 U	0.14 U	0.13 U	0.098 U	0.11 U	0.12 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.016 UJ	0.018 UJ	0.014 UJ	0.015 UJ	0.015 UJ	0.014 UJ	0.022 U	0.021 U	0.015 U	0.018 U	0.019 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.036 U	0.041 U	0.033 U	0.035 U	0.034 U	0.032 U	0.049 U	0.047 U	0.034 U	0.04 U	0.042 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.038 U	0.043 U	0.035 U	0.037 U	0.036 UJ	0.034 U	0.052 U	0.05 U	0.036 U	0.042 U	0.045 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.012 U	0.0099 U	0.011 U	0.01 U	0.0098 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.009 U	0.01 U	0.0082 U	0.0089 U	0.0085 U	0.0081 U	0.012 U	0.012 U	0.0086 U	0.01 U	0.011 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.084 U	0.096 U	0.077 U	0.083 U	0.079 UJ	0.076 U	0.12 U	0.11 U	0.08 U	0.094 U	0.099 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.29 U	0.33 U	0.26 U	0.28 U	0.27 UJ	0.26 U	0.4 U	0.38 U	0.28 U	0.32 U	0.34 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.017 U	0.014 U	0.015 U	0.014 U	0.014 U	0.021 U	0.02 U	0.014 U	0.017 U	0.018 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.023 U	0.019 U	0.02 U	0.019 U	0.018 U	0.028 U	0.027 U	0.019 U	0.023 U	0.024 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0087 U	0.0099 U	0.0079 U	0.0085 U	0.0082 UJ	0.0078 U	0.012 U	0.011 U	0.0083 U	0.0097 U	0.01 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0097 U	0.011 U	0.0089 U	0.0096 U	0.0092 U	0.0088 U	0.013 U	0.013 U	0.0093 U	0.011 U	0.011 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0085 U	0.0096 U	0.0077 U	0.0083 U	0.008 U	0.0076 U	0.012 U	0.011 U	0.0081 U	0.0094 U	0.0099 U
2-Methylphenol	320	4100	0.075	mg/kg	0.017 U	0.019 U	0.015 U	0.016 U	0.016 U	0.015 U	0.023 U	0.022 U	0.016 U	0.019 U	0.02 U
2-Nitroaniline	63	800	0.008	mg/kg	0.013 U	0.014 U	0.012 U	0.012 U	0.012 U	0.011 U	0.017 U	0.016 U	0.012 U	0.014 U	0.015 U
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.015 U	0.012 U	0.013 U	0.012 U	0.012 U	0.018 U	0.017 U	0.012 U	0.014 U	0.015 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.01 U	0.012 U	0.0093 U	0.01 U	0.0096 U	0.0092 U	0.014 U	0.013 U	0.0097 U	0.011 U	0.012 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.043 U	0.049 U	0.039 U	0.042 U	0.04 U	0.038 U	0.059 U	0.056 U	0.041 U	0.048 U	0.05 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.016 U	0.015 U	0.011 U	0.013 U	0.013 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.12 U	0.093 U	0.1 U	0.096 UJ	0.092 U	0.14 U	0.13 U	0.098 U	0.11 U	0.12 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.014 U	0.011 U	0.012 U	0.011 U	0.011 U	0.017 U	0.016 U	0.012 U	0.013 U	0.014 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.019 U	0.015 U	0.016 U	0.016 U	0.015 U	0.023 U	0.021 U	0.016 U	0.018 U	0.019 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0098 U	0.011 U	0.009 U	0.0097 U	0.0093 U	0.0089 U	0.014 U	0.013 U	0.0094 U	0.011 U	0.012 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.016 U	0.015 U	0.011 U	0.013 U	0.013 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.016 U	0.013 U	0.014 U	0.014 U	0.013 U	0.02 U	0.019 U	0.014 U	0.016 U	0.017 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.21 UJ	0.17 UJ	0.18 U	0.17 UJ	0.17 UJ	0.25 U	0.24 U	0.18 U	0.21 U	0.22 U
Acenaphthene	360	4500	0.55	mg/kg	0.0093 U	0.011 U	0.0085 U	0.0091 U	0.0087 U	0.0083 U	0.013 U	0.012 U	0.0089 U	0.01 U	0.011 U
Acenaphthylene	--	--	--	mg/kg	0.0098 U	0.011 U	0.009 U	0.0097 U	0.0093 U	0.0089 U	0.014 U	0.013 U	0.0094 U	0.011 U	0.012 U
Acetophenone	780	12000	0.058	mg/kg	0.0083 U	0.0095 U	0.0076 U	0.0082 U	0.0079 U	0.0075 U	0.011 U	0.011 U	0.008 U	0.0093 U	0.0098 U
Anthracene	1800	23000	5.8	mg/kg	0.036 U	0.041 U	0.033 U	0.036 U	0.034 U	0.033 U	0.05 U	0.047 U	0.035 U	0.041 U	0.043 U
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.019 U	0.016 U	0.017 U	0.016 U	0.015 U	0.023 U	0.022 U	0.016 U	0.019 U	0.02 U
Benzaldehyde	170	820	0.0041	mg/kg	0.029 U	0.033 U	0.027 U	0.029 U	0.028 UJ	0.026 U	0.04 U	0.038 U	0.028 U	0.033 U	0.034 U
Benzo[a]anthracene	0.16	2.9	0.0042	mg/kg	0.032 U	0.036 U	0.029 U	0.091 J	0.03 U	0.029 U	0.044 U	0.042 U	0.031 U	0.036 U	0.038 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.017 J**	0.013 U	0.011 U	**0.11 J**	**0.019 J**	0.01 U	0.016 U	0.015 U	0.011 U	0.014 J	0.014 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.044	0.017 U	0.014 U	**0.24 J**	0.032 J	0.013 U	0.021 U	0.019 U	0.014 U	0.032 J	0.018 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.022 U	0.025 U	0.02 U	0.11 J	0.021 U	0.02 U	0.03 U	0.029 U	0.021 U	0.025 U	0.026 U
Benzo[k]fluoranthene	1.6	29	0.4	mg/kg	0.02 J	0.019 U	0.015 U	0.072 J	0.016 U	0.015 U	0.023 U	0.022 U	0.016 U	0.019 U	0.02 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.014 U	0.011 U	0.012 U	0.011 U	0.011 U	0.016 U	0.016 U	0.011 U	0.013 U	0.014 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.009 U	0.01 U	0.0082 U	0.0089 U	0.0085 U	0.0081 U	0.012 U	0.012 U	0.0086 U	0.01 U	0.011 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.017 U	0.014 U	0.015 U	0.014 U	0.013 U	0.021 U	0.019 U	0.014 U	0.017 U	0.018 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.011 U	0.016 U	0.015 U	0.011 U	0.013 U	0.014 U
Caprolactam	3100	40000	0.25	mg/kg	0.028 U	0.031 U	0.025 U	0.027 U	0.026 UJ	0.025 U	0.038 U	0.036 U	0.026 U	0.031 U	0.032 U
Carbazole	--	--	--	mg/kg	0.0095 U	0.011 U	0.0087 U	0.014 J	0.009 U	0.0085 U	0.013 U	0.012 U	0.0091 U	0.011 U	0.011 U
Chrysene	16	290	1.2	mg/kg	0.032 J	0.012 U	0.0095 U	0.15 J	0.023 J	0.0094 U	0.014 U	0.014 U	0.01 U	0.02 J	0.014 J
Dibenz(a,h)anthracene	0.016	0.29	0.013	mg/kg	0.02 U	0.023 U	0.018 U	0.02 U	0.019 U	0.018 U	0.027 U	0.026 U	0.019 U	0.022 U	0.023 U
Dibenzofuran	7.3	100	0.015	mg/kg	0.012 U	0.013 U	0.011 U	0.011 U	0.011 U	0.01 U	0.016 U	0.015 U	0.011 U	0.013 U	0.014 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.011 U	0.012 U	0.0099 U	0.011 U	0.01 U	0.0098 U	0.015 U	0.032 J	0.01 U	0.012 U	0.013 U
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.013 U	0.01 U	0.011 U	0.01 U	0.01 U	0.015 U	0.015 U	0.011 U	0.012 U	0.013 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.013 U	0.01 U	0.011 U	0.011 U	0.011 J	0.016 U	0.48 J	0.011 U	0.013 U	0.013 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.022 U	0.018 U	0.019 U	0.018 U	0.018 U	0.027 U	0.025 U	0.019 U	0.022 U	0.023 U
Fluoranthene	240	3000	8.9	mg/kg	0.028 J	0.013 U	0.01 U	0.17 J	0.029 J	0.01 U	0.016 U	0.015 U	0.011 U	0.019 J	0.013 U
Fluorene	240	3000	0.54	mg/kg	0.0083 U	0.0095 U	0.0076 U	0.0082 U	0.0079 U	0.0075 U	0.011 U	0.011 U	0.008 U	0.0093 U	0.0098 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.016 U	0.018 U	0.014 U	0.015 U	0.015 U	0.014 U	0.021 U	0.02 U	0.015 U	0.017 U	0.018 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.011 U	0.012 U	0.0098 U	0.011 U	0.01 U	0.0097 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.024 U	0.027 U	0.022 U	0.023 U	0.023 U	0.021 U	0.033 U	0.031 U	0.023 U	0.027 U	0.028 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.014 U	0.016 U	0.013 U	0.014 U	0.013 UJ	0.013 U	0.019 U	0.018 U	0.013 U	0.016 U	0.016 U
Indeno[1,2,3-cd]pyrene	0.16	2.9	0.13	mg/kg	0.025 U	0.029 U	0.023 U	0.11 J	0.024 U	0.023 U	0.035 U	0.033 U	0.024 U	0.028 U	0.03 U
Isophorone	570	2400	0.026	mg/kg	0.0082 U	0.0094 U	0.0075 U	0.0081 U	0.0078 U	0.0074 U	0.011 U	0.011 U	0.0079 U	0.0092 U	0.0097 U
Naphthalene	3.8	17	0.00054	mg/kg	0.0097 U	0.011 U	0.0089 U	0.0096 U	0.0092 UJ	0.0088 U	0.013 U	0.013 U	0.0093 U	0.011 U	0.011 U

Pending - Under EPA & MDEQ Review

Table L20. Semivolatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-122	CFSB-123	CFSB-123
			Sample Date:		18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:		CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
Nitrobenzene	5.1	22	0.000092	mg/kg	0.012 U	0.014 U	0.011 U	0.012 U	0.011 UJ	0.011 U	0.017 U	0.016 U	0.012 U	0.013 U	0.014 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.013 U	0.015 U	0.012 U	0.013 U	0.012 U	0.012 U	0.018 U	0.017 U	0.012 U	0.014 U	0.015 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.035 U	0.04 U	0.032 U	0.034 U	0.033 UJ	0.031 U	0.048 U	0.045 U	0.033 U	0.039 U	0.041 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.046 U	0.053 U	0.042 U	0.045 U	0.044 U	0.042 U	0.064 U	0.06 U	0.044 U	0.052 U	0.054 U
Phenanthrene	--	--	--	mg/kg	0.016 J	0.012 U	0.0093 U	0.083 J	0.016 J	0.0092 U	0.014 U	0.013 U	0.0097 U	0.015 J	0.012 U
Phenol	1900	25000	0.33	mg/kg	0.013 U	0.014 U	0.011 U	0.012 U	0.012 U	0.011 U	0.017 U	0.016 U	0.012 U	0.014 U	0.015 U
Pyrene	180	2300	1.3	mg/kg	0.027 J	0.02 U	0.016 U	0.17 J	0.029 J	0.016 U	0.024 U	0.023 U	0.017 U	0.02 J	0.02 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L20. Semivolatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: / Sample Date: / Sample Depth (ft-bls): / Sample Designation: CFSB-123 19 May 2016 10 - 12 CFSB-123-SO-10-12	CFSB-124 19 May 2016 0 - 0.5 CFSB-124-SO-0-0.5	CFSB-124 19 May 2016 0.5 - 2 CFSB-124-SO-0.5-2.0	CFSB-124 19 May 2016 10 - 12 CFSB-124-SO-10-12	CFSB-125 18 May 2016 0 - 0.5 CFSB-125-SO-0-0.5	CFSB-125 18 May 2016 0.5 - 2 CFSB-125-SO-0.5-2.0	CFSB-125 18 May 2016 10 - 12 CFSB-125-SO-10-12	CFSB-126 18 May 2016 0 - 0.5 CFSB-126-SO-0-0.5	CFSB-126 18 May 2016 0.5 - 2 CFSB-126-SO-0.5-2.0	CFSB-126 18 May 2016 10 - 12 CFSB-126-SO-10-12	CFSB-127 18 May 2016 0 - 0.5 CFSB-127-SO-0-0.5
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.038 U	0.037 U	0.03 U	0.032 U	0.031 U	0.03 U	0.037 U	0.032 U	0.03 U	0.032 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.033 U	0.032 U	0.026 U	0.028 U	0.027 U	0.026 U	0.032 U	0.028 U	0.026 U	0.028 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.094 U	0.12 U	0.11 U	0.094 U	0.099 U	0.096 U	0.094 U	0.11 U	0.099 U	0.094 U	0.1 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.018 U	0.018 U	0.014 U	0.015 UJ	0.015 UJ	0.015 UJ	0.018 UJ	0.015 UJ	0.014 UJ	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.042 U	0.04 U	0.033 U	0.035 U	0.034 U	0.033 U	0.04 U	0.035 U	0.033 U	0.036 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.035 U	0.044 U	0.043 U	0.035 U	0.037 U	0.036 U	0.035 U	0.043 U	0.037 U	0.035 U	0.038 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.013 U	0.012 U	0.01 U	0.011 U	0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0083 U	0.011 U	0.01 U	0.0083 U	0.0087 U	0.0085 U	0.0083 U	0.01 U	0.0088 U	0.0083 U	0.0089 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.077 U	0.098 U	0.095 U	0.077 U	0.081 U	0.079 U	0.078 U	0.094 U	0.082 U	0.077 U	0.083 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 U	0.34 U	0.33 U	0.27 U	0.28 U	0.27 U	0.27 U	0.32 U	0.28 U	0.27 U	0.29 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.018 U	0.017 U	0.014 U	0.015 U	0.014 U	0.014 U	0.017 U	0.015 U	0.014 U	0.015 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.024 U	0.023 U	0.019 U	0.02 U	0.019 U	0.019 U	0.023 U	0.02 U	0.019 U	0.02 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.01 U	0.0098 U	0.008 U	0.0084 U	0.0081 U	0.008 U	0.0097 U	0.0084 U	0.008 U	0.0086 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0089 U	0.011 U	0.011 U	0.0089 U	0.0094 U	0.0091 U	0.009 U	0.011 U	0.0094 U	0.0089 U	0.0096 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.0099 U	0.0095 U	0.0078 U	0.0082 U	0.0079 U	0.0078 U	0.0095 U	0.0082 U	0.0078 U	0.0083 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.019 U	0.019 U	0.015 U	0.016 U	0.016 U	0.015 U	0.019 U	0.016 U	0.015 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.015 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.015 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0093 U	0.012 U	0.011 U	0.0094 U	0.0098 U	0.0095 U	0.0094 U	0.011 U	0.0099 U	0.0094 U	0.01 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.05 U	0.048 U	0.039 U	0.041 U	0.04 U	0.039 U	0.048 U	0.041 U	0.039 U	0.042 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.013 U	0.013 U	0.01 U	0.011 U	0.011 U	0.01 U	0.013 U	0.011 U	0.01 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.093 U	0.12 U	0.11 U	0.094 U	0.099 U	0.096 U	0.094 U	0.11 U	0.099 U	0.094 U	0.1 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.014 U	0.014 U	0.011 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.019 U	0.018 U	0.015 U	0.016 U	0.015 U	0.015 U	0.018 U	0.016 U	0.015 U	0.016 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.009 U	0.011 U	0.011 U	0.0091 U	0.0095 U	0.0092 U	0.0091 U	0.011 U	0.0095 U	0.009 U	0.0097 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.013 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.017 U	0.016 U	0.013 U	0.014 U	0.014 U	0.013 U	0.016 U	0.014 U	0.013 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.21 U	0.21 U	0.17 U	0.18 U	0.17 U	0.17 UJ	0.21 U	0.18 U	0.17 UJ	0.18 U
Acenaphthene	360	4500	0.55	mg/kg	0.0085 U	0.011 U	0.01 U	0.0085 U	0.0089 U	0.0087 U	0.0085 U	0.01 U	0.009 U	0.0085 U	0.0091 U
Acenaphthylene	--	--	--	mg/kg	0.009 U	0.011 U	0.011 U	0.0091 U	0.0095 U	0.0092 U	0.0091 U	0.011 U	0.0095 U	0.009 U	0.0097 U
Acetophenone	780	12000	0.058	mg/kg	0.0076 U	0.0097 U	0.0094 U	0.0077 U	0.0081 U	0.0078 U	0.0077 U	0.0093 U	0.0081 U	0.0077 U	0.0082 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.042 U	0.041 U	0.033 U	0.035 U	0.034 U	0.033 U	0.041 U	0.035 U	0.033 U	0.036 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.02 U	0.019 U	0.016 U	0.016 U	0.016 U	0.016 U	0.019 U	0.017 U	0.016 U	0.017 U
Benzaldehyde	170	820	0.0041	mg/kg	0.027 U	0.034 U	0.033 U	0.027 U	0.028 U	0.027 U	0.027 U	0.033 U	0.028 U	0.027 U	0.029 U
Benzo[a]anthracene	0.16	2.9	0.0042	mg/kg	0.029 U	0.037 J	0.036 U	0.029 U	0.044	0.03 U	0.029 U	0.036 U	0.031 U	0.029 U	0.032 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	**0.028 J**	0.015 J	0.011 U	**0.051**	0.013 J	0.011 U	**0.023 J**	0.011 U	0.011 U	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.014 U	0.063	0.031 J	0.014 U	0.1	0.026 J	0.014 U	0.049	0.014 U	0.014 U	0.02 J
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.037 J+	0.025 U	0.02 U	0.074 J	0.022 J	0.02 U	0.025 U	0.021 U	0.02 U	0.022 U
Benzo[k]fluoranthene	1.6	29	0.4	mg/kg	0.015 U	0.028 J	0.019 U	0.015 U	0.035 J	0.016 U	0.015 U	0.019 U	0.016 U	0.015 U	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.014 U	0.013 U	0.011 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0083 U	0.011 U	0.01 U	0.0083 U	0.0087 U	0.0085 U	0.0083 U	0.01 U	0.0088 U	0.0083 U	0.0089 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.017 U	0.017 U	0.014 U	0.014 U	0.014 U	0.014 U	0.017 U	0.014 U	0.014 U	0.015 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.014 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.032 U	0.031 U	0.025 U	0.027 U	0.026 U	0.025 U	0.031 U	0.027 U	0.025 U	0.027 U
Carbazole	--	--	--	mg/kg	0.0087 U	0.011 U	0.011 U	0.0087 U	0.0092 U	0.0089 U	0.0087 U	0.011 U	0.0092 U	0.0087 U	0.0094 U
Chrysene	16	290	1.2	mg/kg	0.0095 U	0.048 J	0.02 J	0.0096 U	0.065 J	0.014 J	0.0096 U	0.031 J	0.01 U	0.0096 U	0.013 J
Dibenz(a,h)anthracene	0.016	0.29	0.013	mg/kg	0.018 U	0.023 U	0.022 U	0.018 U	0.019 U	0.019 U	0.018 U	0.022 U	0.019 U	0.018 U	0.02 U
Dibenzofuran	7.3	100	0.015	mg/kg	0.011 U	0.014 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.013 U	0.012 U	0.01 U	0.011 U	0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.011 U
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.013 U	0.012 U	0.01 U	0.011 U	0.01 U	0.01 U	0.012 U	0.011 U	0.01 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.01 U	0.013 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.023 U	0.022 U	0.018 U	0.019 U	0.018 U	0.018 U	0.022 U	0.019 U	0.018 U	0.019 U
Fluoranthene	240	3000	8.9	mg/kg	0.01 U	0.043 J	0.018 J	0.01 U	0.065 J	0.013 J	0.01 U	0.034 J	0.011 U	0.01 U	0.016 J
Fluorene	240	3000	0.54	mg/kg	0.0076 U	0.0097 U	0.0094 U	0.0077 U	0.0081 U	0.0078 U	0.0077 U	0.0093 U	0.0081 U	0.0077 U	0.0082 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.018 U	0.017 U	0.014 U	0.015 U	0.015 U	0.014 U	0.017 U	0.015 U	0.014 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0098 U	0.013 U	0.012 U	0.0099 U	0.01 U	0.01 U	0.0099 U	0.012 U	0.01 U	0.0099 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.028 U	0.027 U	0.022 U	0.023 U	0.022 U	0.022 U	0.027 U	0.023 U	0.022 U	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.016 U	0.016 U	0.013 U	0.014 U	0.013 U	0.013 U	0.016 U	0.014 U	0.013 U	0.014 U
Indeno[1,2,3-cd]pyrene	0.16	2.9	0.13	mg/kg	0.023 U	0.033 J	0.029 U	0.023 U	0.082	0.024 U	0.023 U	0.029 U	0.025 U	0.023 U	0.025 U
Isophorone	570	2400	0.026	mg/kg	0.0075 U	0.0096 U	0.0092 U	0.0076 U	0.0079 U	0.0077 U	0.0076 U	0.0092 U	0.008 U	0.0076 U	0.0081 U
Naphthalene	3.8	17	0.00054	mg/kg	0.0089 U	0.011 U	0.011 U	0.0089 U	0.0094 U	0.0091 U	0.009 U	0.011 U	0.0094 U	0.0089 U	0.0096 U

Pending - Under EPA Review

Table L20. Semivolatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-123	CFSB-124	CFSB-124	CFSB-124	CFSB-125	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127
			Sample Date:		19 May 2016	19 May 2016	19 May 2016	19 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016
			Sample Depth (ft-bls):		10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
			Sample Designation:		CFSB-123-SO-10-12	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.014 U	0.014 U	0.011 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.015 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.032 U	0.041 U	0.039 U	0.032 U	0.034 U	0.033 U	0.032 U	0.039 U	0.034 U	0.032 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 U	0.054 U	0.052 U	0.043 U	0.045 U	0.043 U	0.043 U	0.052 U	0.045 U	0.043 U	0.046 U
Phenanthrene	--	--	--	mg/kg	0.0093 U	0.028 J	0.013 J	0.0094 U	0.031 J	0.0095 U	0.0094 U	0.015 J	0.0099 U	0.0094 U	0.01 U
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.015 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.011 U	0.012 U
Pyrene	180	2300	1.3	mg/kg	0.016 U	0.044 J	0.022 J	0.016 U	0.067 J	0.016 U	0.016 U	0.033 J	0.017 U	0.016 U	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L20. Semivolatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-127	CFSB-127
				Sample Date:	18 May 2016	18 May 2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12
				Sample Designation:	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit		
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.031 U	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.027 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.098 U	0.096 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.015 UJ
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.034 U	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.036 U	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.01 U	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0086 U	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.08 U	0.079 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 U	0.27 U
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.019 U	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0083 U	0.0081 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0093 U	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0081 U	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0097 U	0.0095 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.041 U	0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.097 U	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0094 U	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.17 UJ
Acenaphthene	360	4500	0.55	mg/kg	0.0088 U	0.0087 U
Acenaphthylene	--	--	--	mg/kg	0.0094 U	0.0092 U
Acetophenone	780	12000	0.058	mg/kg	0.0079 U	0.0078 U
Anthracene	1800	23000	5.8	mg/kg	0.035 U	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.016 U	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.027 U
Benzo[a]anthracene	0.16	2.9	0.0042	mg/kg	0.03 U	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.014 U	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.021 U	0.021 U
Benzo[k]fluoranthene	1.6	29	0.4	mg/kg	0.016 U	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0086 U	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.026 U	0.026 U
Carbazole	--	--	--	mg/kg	0.009 U	0.0089 U
Chrysene	16	290	1.2	mg/kg	0.0099 U	0.0097 U
Dibenz(a,h)anthracene	0.016	0.29	0.013	mg/kg	0.019 U	0.019 U
Dibenzofuran	7.3	100	0.015	mg/kg	0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.01 U	0.01 U
Dimethyl phthalate	--	--	--	mg/kg	0.011 U	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.019 U	0.018 U
Fluoranthene	240	3000	8.9	mg/kg	0.011 U	0.011 U
Fluorene	240	3000	0.54	mg/kg	0.0079 U	0.0078 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.015 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.01 U	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.023 U	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U
Indeno[1,2,3-cd]pyrene	0.16	2.9	0.13	mg/kg	0.024 U	0.024 U
Isophorone	570	2400	0.026	mg/kg	0.0078 U	0.0077 U
Naphthalene	3.8	17	0.00054	mg/kg	0.0093 U	0.0091 U

Preliminary - Under EPA and MDEQ Review

Table L20. Semivolatile Organic Compounds in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-127	CFSB-127
				Sample Date:	18 May 2016	18 May 2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12
				Sample Designation:	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit		
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.033 U	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.044 U	0.043 U
Phenanthrene	--	--	--	mg/kg	0.0097 U	0.0095 U
Phenol	1900	25000	0.33	mg/kg	0.012 U	0.012 U
Pyrene	180	2300	1.3	mg/kg	0.017 U	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L21. Metals in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-123
					Sample Date: 18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016
					Sample Depth (ft-bls): 0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
					Sample Designation: CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg	**20400**	**30900**	6030	**18100**	**16700**	6570 J	**20200 J**	**15800 J**	4740 J	**17300 J**	**18800 J**	3840 J
Antimony	3.1	47	0.035	mg/kg	0.37 UJ	0.42 UJ	0.35 UJ	0.37 UJ	0.36 UJ	0.32 UJ	0.5 UJ	0.51 UJ	0.34 UJ	0.41 UJ	0.44 UJ	0.35 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**4.5**	**5.6**	**2.8**	**5**	**4.4**	**4.6 J**	**2.8 J**	**2.2 J**	**3.5 J**	**4.8 J**	**5.3 J**	**2.1 J**
Barium	1500	22000	16	mg/kg	245	440	30.3	195	156	69.3	289	288	43	278	305	45.1
Beryllium	16	230	1.9	mg/kg	0.97	1.2	0.3 J	0.66	0.57	0.37	0.63	0.47 J	0.24 J	0.77	0.87	0.22 J
Cadmium	7.1	98	0.069	mg/kg	0.28 U	0.32 U	0.26 U	0.28 U	0.28 U	0.24 U	0.38 U	0.39 U	0.26 U	0.31 U	0.33 U	0.27 U
Calcium	--	--	--	mg/kg	3520	3600	9280	2570	1830	32300	3300	3150	29200	5430	5820	9420
Chromium	--	--	--	mg/kg	16.9	20.9	7.3	10	10.1	9.3	5.4	4.9	6.3	15.3	16.3	6.7
Cobalt	**2.3**	35	0.027	mg/kg	**6.2**	**7.2**	**3.8**	**6.4**	**6.3**	**4.5**	**2.9**	**2.8**	**3.7**	**5.8**	**6.3**	**3.2**
Copper	310	4700	2.8	mg/kg	20.3	23	9.6	12.6	10.7	14.8 J	9.1 J	10.2 J	10.6 J	18.5 J	18.4 J	3.7 J
Cyanide, Total	2.3	15	0.0015	mg/kg	0.11 J	0.078 J	0.022 J	0.1 J	0.074 J	0.022 J	0.026 U	0.024 U	0.017 U	0.12 J	0.093 J	0.018 U
Iron	**5500**	82000	35	mg/kg	**17300**	**18200**	**9730**	**16500**	**16400**	**12800**	**8140**	**7710**	**9580**	**15800**	**17100**	**7100**
Lead	400	800	--	mg/kg	14.8	16	7	11.5	9.3	6.1	6.4	5.1	6.1	13.7	14.3	3.1
Magnesium	--	--	--	mg/kg	11200	10600	8470	7030	7240	9470	2940	2950	6060	10100	10700	6250
Manganese	**180**	2600	2.8	mg/kg	**222**	**296**	115	**529**	**454**	**396 J**	49.4 J	44.4 J	**224 J**	**363 J**	**411 J**	**362 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.026	0.039	0.012 U	0.013 J	0.013 U	0.013 J	0.019 U	0.017 U	0.012 J	0.033	0.032	0.012 U
Nickel	150	2200	2.6	mg/kg	13.4	14.2	7.1	13	12	8.4	6.4	5.8	6.9	11.4	12	5.2
Potassium	--	--	--	mg/kg	1230	1340	529	1080	938	670	519	551	427	1160	1210	475
Selenium	39	580	0.052	mg/kg	0.49 J	0.39 J	0.33 U	0.34 U	0.34 U	0.3 U	0.46 U	0.48 U	0.32 U	0.9 J	1.1 J	0.33 U
Silver	39	580	0.08	mg/kg	0.68 U	0.76 U	0.64 U	0.67 U	0.66 U	0.59 U	0.91 U	0.93 U	0.62 U	0.75 U	0.81 U	0.64 U
Sodium	--	--	--	mg/kg	95.1	251	32.5 U	39.6 J	54.9 J	43.5 J	552	555	31.8 U	78.7 J	93.9 J	32.8 U
Thallium	0.078	1.2	0.0014	mg/kg	0.14 U	0.16 U	0.13 U	0.14 U	0.14 U	0.12 U	0.19 U	0.19 U	0.13 U	0.16 U	0.17 U	0.13 U
Vanadium	39	580	8.6	mg/kg	13	12.4	6.7	15.9	15.1	10.5	7.7	7.4	6.4	10.5	11.3	4.9
Zinc	2300	35000	37	mg/kg	50.7	46.9	24.7	57.9	47.2	28.3	13.6	12.6	23.1	47.3	50.8	16.9

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L21. Metals in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: / Sample Date: / Sample Depth (ft-bls): / Sample Designation:											
					CFSB-124 19 May 2016 0 - 0.5 CFSB-124-SO-0-0.5	CFSB-124 19 May 2016 0.5 - 2 CFSB-124-SO-0.5-2.0	CFSB-124 19 May 2016 10 - 12 CFSB-124-SO-10-12	CFSB-125 18 May 2016 0 - 0.5 CFSB-125-SO-0-0.5	CFSB-125 18 May 2016 0.5 - 2 CFSB-125-SO-0.5-2.0	CFSB-125 18 May 2016 10 - 12 CFSB-125-SO-10-12	CFSB-126 18 May 2016 0 - 0.5 CFSB-126-SO-0-0.5	CFSB-126 18 May 2016 0.5 - 2 CFSB-126-SO-0.5-2.0	CFSB-126 18 May 2016 10 - 12 CFSB-126-SO-10-12	CFSB-127 18 May 2016 0 - 0.5 CFSB-127-SO-0-0.5	CFSB-127 18 May 2016 0.5 - 2 CFSB-127-SO-0.5-2.0	CFSB-127 18 May 2016 10 - 12 CFSB-127-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg	**20500 J**	**19600 J**	6740 J	**19600**	**16200**	**8380**	**29200**	**18900**	**9010**	**26900**	**11700**	**13800**
Antimony	3.1	47	0.035	mg/kg	0.43 UJ	0.42 UJ	0.35 UJ	0.37 UJ	0.36 UJ	0.35 UJ	0.4 UJ	0.38 UJ	0.33 UJ	0.35 UJ	0.38 UJ	0.35 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**5.9 J**	**6.8 J**	**5.3 J**	**4.8**	**4.7**	**4.1**	**7.1**	**5.3**	**4.5**	**6.4**	**6**	**4.7**
Barium	1500	22000	16	mg/kg	347	303	60.4	229	188	87	429	245	80	429	120	172
Beryllium	16	230	1.9	mg/kg	0.95	0.81	0.33 J	0.65	0.76	0.48	1.2	0.61	0.37	0.98	0.35 J	0.49
Cadmium	7.1	98	0.069	mg/kg	0.33 U	0.32 U	0.26 U	0.28 U	0.27 U	0.27 U	0.3 U	0.29 U	0.25 U	0.26 U	0.29 U	0.27 U
Calcium	--	--	--	mg/kg	5850	4730	13400	17200	10900	15600	6000	3040	17100	3630	2370	9300
Chromium	--	--	--	mg/kg	18.3	15.3	9.9	11.1	11.1	11	15.5	13.9	21.3	13.3	10.7	14
Cobalt	**2.3**	35	0.027	mg/kg	**7**	**7.2**	**4.7**	**7.2**	**5.9**	**5.7**	**6.1**	**7.4**	**5.1**	**6.1**	**5.5**	**5.7**
Copper	310	4700	2.8	mg/kg	27 J	18.4 J	9.2 J	14.1	15	17.4	24.5	20.6	12.3	17	10.6	10.9
Cyanide, Total	2.3	15	0.0015	mg/kg	0.68	0.16	0.024 J	0.12	0.034 J	0.034 J	0.17	0.12	0.026 J	0.087 J	0.052 J	0.029 J
Iron	**5500**	82000	35	mg/kg	**19900**	**19200**	**12100**	**17200**	**15000**	**12900**	**18600**	**17800**	**13300**	**18700**	**15800**	**15000**
Lead	400	800	--	mg/kg	15.9	12.5	4.8	12.5	12.4	7.9	15.2	19.3	6.5	12.5	21.2	7.7
Magnesium	--	--	--	mg/kg	11400	9440	8020	8510	7960	10900	9020	9280	12100	7440	9240	11400
Manganese	**180**	2600	2.8	mg/kg	**470 J**	**558 J**	**432 J**	**576**	**462**	**424**	**446**	**462**	**494**	**347**	**659**	**642**
Mercury	1.1	4.6	0.0033	mg/kg	0.019 J	0.016 J	0.012 J	0.018	0.017 J	0.026	0.036	0.021	0.016 J	0.021	0.017 J	0.019
Nickel	150	2200	2.6	mg/kg	14.2	13	9	13.3	10.5	11.1	13.6	12.6	10.8	12.1	10.3	11.6
Potassium	--	--	--	mg/kg	1510	1220	710	1020	969	693	1310	782	733	953	555	788
Selenium	39	580	0.052	mg/kg	0.93 J	0.74 J	0.33 U	0.35 U	0.34 U	0.33 U	0.71 J	0.35 U	0.31 U	0.4 J	0.35 U	0.33 U
Silver	39	580	0.08	mg/kg	0.8 U	0.77 U	0.64 U	0.68 U	0.66 U	0.65 U	0.73 U	0.69 U	0.6 U	0.63 U	0.69 U	0.65 U
Sodium	--	--	--	mg/kg	76.5 J	74 J	32.5 U	62.7 J	63.3 J	33.1 U	136	78 J	35.2 J	135	38.8 J	64.3 J
Thallium	0.078	1.2	0.0014	mg/kg	0.16 U	0.16 U	0.13 U	0.14 U	0.14 U	0.13 U	0.15 U	0.14 U	0.12 U	0.13 U	0.14 U	0.13 U
Vanadium	39	580	8.6	mg/kg	12.7	13.3	6.9	16.5	14	8.6	13.8	12.6	9.3	14.7	12	10.4
Zinc	2300	35000	37	mg/kg	72	59.9	29.3	79.6	53.7	32.4	66.8	52.1	31.7	59.4	36.1	41.3

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L22. Polychlorinated Biphenyl in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:	CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-122	CFSB-123	CFSB-123
			Sample Date:	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016
			Sample Depth (ft-bls):	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2
			Sample Designation:	CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.012 U	0.0094 U	0.01 U	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.012 U	0.0094 U	0.01 U	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.012 U	0.0094 U	0.01 U	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.012 U	0.0094 U	0.01 U	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.012 U	0.0094 U	0.01 U	0.0097 U	0.0093 U	0.014 U	0.013 U	0.0099 U	0.011 U	0.012 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.012 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.012 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.012 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.012 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.012 U	0.0097 U	0.01 U	0.01 U	0.0096 U	0.015 U	0.014 U	0.01 U	0.012 U	0.013 U

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L22. Polychlorinated Biphenyl in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFSB-123	CFSB-124	CFSB-124	CFSB-124	CFSB-125	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127
					Sample Date:	19 May 2016	19 May 2016	19 May 2016	19 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016
					Sample Depth (ft-bls):	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5
					Sample Designation:	CFSB-123-SO-10-12	CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit												
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0094 U	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U	0.0095 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0094 U	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U	0.0095 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0094 U	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U	0.0095 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0094 U	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U	0.0095 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0094 U	0.012 U	0.012 U	0.0095 U	0.01 U	0.0097 U	0.0095 U	0.012 U	0.01 U	0.0095 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0098 U	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U	0.0098 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0098 U	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U	0.0098 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.0098 U	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U	0.0098 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.0098 U	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U	0.0098 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0098 U	0.012 U	0.012 U	0.0098 U	0.01 U	0.01 U	0.0098 U	0.012 U	0.01 U	0.0098 U	0.011 U

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L22. Polychlorinated Biphenyl in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSB-127	CFSB-127
				Sample Date:	18 May 2016	18 May 2016
				Sample Depth (ft-bls):	0.5 - 2	10 - 12
				Sample Designation:	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit		
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0098 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0098 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0098 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0098 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0098 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.01 U

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Preliminary - Under EPA and MDEQ Review

L23. Organochlorine Pesticides in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-120	CFSB-121	CFSB-122	CFSB-123	CFSB-124	CFSB-125	CFSB-126	CFSB-127
			Sample Date:		18 May 2016	18 May 2016	19 May 2016	19 May 2016	19 May 2016	18 May 2016	18 May 2016	18 May 2016
			Sample Depth (ft-bls):		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
			Sample Designation:		CFSB-120-SO-0-0.5	CFSB-121-SO-0-0.5	CFSB-122-SO-0-0.5	CFSB-123-SO-0-0.5	CFSB-124-SO-0-0.5	CFSB-125-SO-0-0.5	CFSB-126-SO-0-0.5	CFSB-127-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit								
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.001 U	0.001 U	0.0014 U	0.0011 U	0.0012 U	0.00099 U	0.0011 U	0.001 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0011 U	0.0011 U	0.0015 U	0.0013 U	0.0013 U	0.0011 U	0.0013 U	0.0011 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.0008 U	0.00079 U	0.0011 U	0.00089 U	0.00093 U	0.00077 U	0.0009 U	0.00079 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.00094 U	0.00092 U	0.0013 U	0.001 U	0.0011 U	0.00091 U	0.0011 U	0.00093 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00071 U	0.00069 U	0.00097 U	0.00079 U	0.00083 U	0.00068 U	0.00079 U	0.0007 U
alpha-Chlordane	--	--	--	mg/kg	0.0013 U	0.0012 U	0.0017 U	0.0014 U	0.0015 U	0.0012 U	0.0014 U	0.0012 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00075 U	0.00074 U	0.001 U	0.00084 U	0.00088 U	0.00073 U	0.00084 U	0.00074 U
delta-BHC	--	--	--	mg/kg	0.00085 U	0.00083 U	0.0012 U	0.00094 U	0.00099 U	0.00082 U	0.00095 U	0.00083 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.001 U	0.00099 U	0.0014 U	0.0011 U	0.0012 U	0.00097 U	0.0011 U	0.00099 U
Endosulfan I	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0015 U	0.0012 U	0.0013 U	0.001 U	0.0012 U	0.0011 U
Endosulfan II	--	--	--	mg/kg	0.0012 U	0.0012 U	0.0017 U	0.0014 U	0.0014 U	0.0012 U	0.0014 U	0.0012 U
Endosulfan sulfate	--	--	--	mg/kg	0.0009 U	0.00089 U	0.0012 U	0.001 U	0.0011 U	0.00087 U	0.001 U	0.00089 U
Endrin	1.9	25	0.0092	mg/kg	0.00099 U	0.00097 U	0.0014 U	0.0011 U	0.0011 U	0.00095 U	0.0011 U	0.00097 U
Endrin aldehyde	--	--	--	mg/kg	0.00096 U	0.00095 U	0.0013 U	0.0011 U	0.0011 U	0.00093 U	0.0011 U	0.00095 U
Endrin ketone	--	--	--	mg/kg	0.0011 U	0.0011 U	0.0015 U	0.0012 U	0.0013 U	0.001 U	0.0012 U	0.0011 U
gamma-BHC (Lindane)	0.57	2.5	0.00024	mg/kg	0.0007 U	0.00068 U	0.00095 U	0.00077 U	0.00081 U	0.00067 U	0.00078 U	0.00069 U
gamma-Chlordane	--	--	--	mg/kg	0.0017 U	0.0017 U	0.0023 U	0.0019 U	0.002 U	0.0016 U	0.0019 U	0.0017 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.001 U	0.00098 U	0.0014 U	0.0011 U	0.0012 U	0.00096 U	0.0011 U	0.00098 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0015 U	0.0015 U	0.0021 U	0.0017 U	0.0018 U	0.0015 U	0.0017 U	0.0015 U
Methoxychlor	32	410	0.2	mg/kg	0.0016 U	0.0016 U	0.0023 U	0.0018 U	0.0019 U	0.0016 U	0.0018 U	0.0016 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.023 U	0.022 U	0.031 U	0.025 U	0.026 U	0.022 U	0.025 U	0.022 U

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ review

Table L24. General Chemistry in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-120	CFSB-120	CFSB-120	CFSB-121	CFSB-121	CFSB-121	CFSB-122	CFSB-122	CFSB-122	CFSB-123	CFSB-123	CFSB-123
			Sample Date:		18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016	19 May 2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-120-SO-0-0.5	CFSB-120-SO-0.5-2.0	CFSB-120-SO-10-12	CFSB-121-SO-0-0.5	CFSB-121-SO-0.5-2.0	CFSB-121-SO-10-12	CFSB-122-SO-0-0.5	CFSB-122-SO-0.5-2.0	CFSB-122-SO-10-12	CFSB-123-SO-0-0.5	CFSB-123-SO-0.5-2.0	CFSB-123-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit												
Fluoride	310	4700	12	mg/kg	5.63 J	2.43 J-	0.43 J-	13.5 J-	10.1 J-	1.38 J-	12.2 J-	5.57 J-	0.57 J-	10.5 J-	9.29 J-	0.58 J-

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L24. General Chemistry in Soil Samples from Background Area Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSB-124	CFSB-124	CFSB-124	CFSB-125	CFSB-125	CFSB-125	CFSB-126	CFSB-126	CFSB-126	CFSB-127	CFSB-127	CFSB-127
			Sample Date:		19 May 2016	19 May 2016	19 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016	18 May 2016
			Sample Depth (ft-bls):		0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12	0 - 0.5	0.5 - 2	10 - 12
			Sample Designation:		CFSB-124-SO-0-0.5	CFSB-124-SO-0.5-2.0	CFSB-124-SO-10-12	CFSB-125-SO-0-0.5	CFSB-125-SO-0.5-2.0	CFSB-125-SO-10-12	CFSB-126-SO-0-0.5	CFSB-126-SO-0.5-2.0	CFSB-126-SO-10-12	CFSB-127-SO-0-0.5	CFSB-127-SO-0.5-2.0	CFSB-127-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit												
Fluoride	310	4700	12	mg/kg	10.8 J-	6.61 J-	0.92 J-	8.31 J-	8.91 J-	0.97 J-	6.31 J-	5.3 J-	0.75 J-	3.93 J-	1.54 J-	2.61 J-

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Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L25. Volatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFTP-17 / Sample Date: 25 Aug 2016 / Sample Depth (ft-bls): 10 - 12 / Sample Designation: CFTP-17-SO-10-12	CFTP-17 / 25 Aug 2016 / 2 - 4 / CFTP-17-SO-2-4	CFTP-18 / 26 Aug 2016 / 10 - 12 / CFTP-18-SO-10-12	CFTP-18 / 26 Aug 2016 / 2 - 4 / CFTP-18-SO-2-4	CFTP-19 / 25 Aug 2016 / 10 - 12 / CFTP-19-SO-10-12	CFTP-19 / 25 Aug 2016 / 2 - 4 / CFTP-19-SO-2-4	CFTP-20 / 25 Aug 2016 / 10 - 12 / CFTP-20-SO-10-12	CFTP-20 / 25 Aug 2016 / 2 - 4 / CFTP-20-SO-2-4	CFTP-21 / 25 Aug 2016 / 10 - 12 / CFTP-21-SO-10-12	CFTP-21 / 25 Aug 2016 / 2 - 4 / CFTP-21-SO-2-4
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.00041 U	0.00038 U	0.00033 U	0.0003 U	0.00044 U	0.0005 U	0.0003 U	0.00031 U	0.00034 U	0.00039 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00018 U	0.00017 U	0.00015 U	0.00013 U	0.0002 U	0.00023 U	0.00013 U	0.00014 U	0.00015 U	0.00018 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00048 U	0.00044 U	0.00039 U	0.00035 U	0.00051 U	0.00058 U	0.00035 U	0.00036 U	0.0004 U	0.00046 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.0003 U	0.00028 U	0.00025 U	0.00022 U	0.00032 U	0.00037 U	0.00022 U	0.00023 U	0.00025 U	0.00029 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00037 U	0.00034 U	0.0003 U	0.00027 U	0.00039 U	0.00045 U	0.00027 U	0.00028 U	0.00031 U	0.00035 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00044 U	0.00041 U	0.00036 U	0.00032 U	0.00047 U	0.00054 U	0.00032 U	0.00033 U	0.00037 U	0.00042 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00012 U	0.00011 U	0.000097 U	0.000087 U	0.00013 U	0.00015 U	0.000087 U	0.000089	9.0.00009	0.00011 U
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00035 U	0.00032 U	0.00028 U	0.00025 U	0.00037 U	0.00043 U	0.00025 U	0.00026 U	0.00029 U	0.00033 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00051 U	0.00047 U	0.00041 U	0.00037 U	0.00054 U	0.00062 U	0.00037 U	0.00038 U	0.00042 U	0.00049 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00015 U	0.00014 U	0.00012 U	0.00011 U	0.00016 U	0.00019 U	0.00011 U	0.00011 U	0.00013 U	0.00014 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00012 U	0.00011 U	0.000097 U	0.000087 U	0.00013 U	0.00015 U	0.000087 U	0.000089	9.0.00009	0.00011 U
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00018 U	0.00017 U	0.00015 U	0.00013 U	0.0002 U	0.00023 U	0.00013 U	0.00014 U	0.00015 U	0.00018 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.000094	0.00014 U	0.00016 U	0.000095 U	0.000097 U	0.00011 U	0.00012 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00014 U	0.00013 U	0.00011 U	0.0001 U	0.00015 U	0.00017 U	0.0001 U	0.00011 U	0.00012 U	0.00013 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.0031 J	0.0029 J	0.00068 U	0.0023 J	0.00089 U	0.001 U	0.00061 U	0.00062 U	0.002 J	0.0048 J
2-Hexanone	20	130	0.00088	mg/kg	0.001 U	0.00095 U	0.00082 U	0.00074 U	0.0011 U	0.0012 U	0.00074 U	0.00076 U	0.00085 U	0.00097 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0024 U	0.0022 U	0.0019 U	0.0017 U	0.0026 U	0.0029 U	0.0018 U	0.0018 U	0.002 U	0.0023 U
Acetone	6100	67000	0.29	mg/kg	0.033	0.038	0.017	0.035	0.0083	0.042	0.0097	0.028	0.02	0.086
Benzene	1.2	5.1	0.00023	mg/kg	0.00022 U	0.0002 U	0.00018 U	0.00016 U	0.0011 J	0.00027 U	0.00016 U	0.00016 U	0.00018 U	0.00021 U
Bromoform	19	86	0.00087	mg/kg	0.00014 U	0.00013 U	0.00011 U	0.0001 U	0.00015 U	0.00017 U	0.0001 U	0.00011 U	0.00012 U	0.00013 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00035 U	0.00032 U	0.00028 U	0.00025 U	0.00037 U	0.00043 U	0.00025 U	0.00026 U	0.00029 U	0.00033 U
Carbon disulfide	77	350	0.024	mg/kg	0.00047 U	0.00043 U	0.00038 U	0.00034 U	0.0005 U	0.00057 U	0.00034 U	0.00035 U	0.00039 U	0.00045 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00047 U	0.00043 U	0.00038 U	0.00034 U	0.0005 U	0.00057 U	0.00034 U	0.00035 U	0.00039 U	0.00045 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00015 U	0.00014 U	0.00012 U	0.00011 U	0.00016 U	0.00019 U	0.00011 U	0.00011 U	0.00013 U	0.00014 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00018 U	0.00017 U	0.00015 U	0.00013 U	0.0002 U	0.00023 U	0.00013 U	0.00014 U	0.00015 U	0.00018 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00016 U	0.00015 U	0.00013 U	0.00012 U	0.00017 U	0.0002 U	0.00012 U	0.00012 U	0.00014 U	0.00016 U
Chloroethane	1400	5700	0.59	mg/kg	0.00038 U	0.00035 U	0.00031 U	0.00028 U	0.0004 U	0.00046 U	0.00028 U	0.00028 U	0.00032 U	0.00036 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00023 U	0.00021 U	0.00018 U	0.00017 U	0.00024 U	0.00028 U	0.00017 U	0.00017 U	0.00019 U	0.00022 U
Chloromethane	11	46	0.0049	mg/kg	0.00041 U	0.00038 U	0.00033 U	0.0003 U	0.00044 U	0.0005 U	0.0003 U	0.00031 U	0.00034 U	0.00039 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00024 U	0.00022 U	0.00019 U	0.00017 U	0.00025 U	0.00029 U	0.00017 U	0.00018 U	0.0002 U	0.00023 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00016 U	0.00015 U	0.00013 U	0.00012 U	0.00017 U	0.0002 U	0.00012 U	0.00012 U	0.00014 U	0.00016 U
Cyclohexane	650	2700	1.3	mg/kg	0.0005 U	0.00046 U	0.0004 U	0.00036 U	0.0017	0.00061 U	0.00036 U	0.00037 U	0.00042 U	0.00048 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.00041 U	0.00038 U	0.00033 U	0.0003 U	0.00044 U	0.0005 U	0.0003 U	0.00031 U	0.00034 U	0.00039 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00035 U	0.00032 U	0.00028 U	0.00025 U	0.00037 U	0.00043 U	0.00025 U	0.00026 U	0.00029 U	0.00033 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.0002 U	0.00018 U	0.00016 U	0.00014 U	0.00054 J	0.00024 U	0.00014 U	0.00015 U	0.00016 U	0.00019 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.000094	0.00014 U	0.00016 U	0.000095 U	0.000097 U	0.00011 U	0.00012 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00018 U	0.00017 U	0.00015 U	0.00013 U	0.0002 U	0.00023 U	0.00013 U	0.00014 U	0.00015 U	0.00018 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00098 U	0.0082	0.00079 U	0.00071 U	0.001 U	0.0059 J	0.00071 U	0.00073 U	0.00081 U	0.00093 U
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00018 U	0.00017 U	0.00015 U	0.00013 U	0.0002 U	0.00023 U	0.00013 U	0.00014 U	0.00015 U	0.00018 U
Methylcyclohexane	--	--	--	mg/kg	0.00054 U	0.0005 U	0.00044 U	0.00039 U	0.0041	0.00066 U	0.00039 U	0.00041 U	0.00045 U	0.00052 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00035 U	0.00032 U	0.00028 U	0.00025 U	0.00037 U	0.0019	0.00025 U	0.00026 U	0.00029 U	0.00033 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00012 U	0.00011 U	0.000097 U	0.000087 U	0.0026	0.00015 U	0.000087 U	0.000089	9.0.00009	0.00011 U
o-Xylene	65	280	0.019	mg/kg	0.00017 U	0.00016 U	0.00014 U	0.00013 U	0.0008 J	0.00021 U	0.00013 U	0.00013 U	0.00014 U	0.00017 U
Styrene	600	3500	0.13	mg/kg	0.00016 U	0.00015 U	0.00013 U	0.00012 U	0.00017 U	0.0002 U	0.00012 U	0.00012 U	0.00014 U	0.00016 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.0003 U	0.00028 U	0.00025 U	0.00022 U	0.00032 U	0.00037 U	0.00022 U	0.00023 U	0.00025 U	0.00029 U
Toluene	490	4700	0.076	mg/kg	0.00021 U	0.00019 U	0.00017 U	0.00048 J	0.0031	0.00025 U	0.00015 U	0.00015 U	0.00017 U	0.0002 U

EPA and NDEQ Review
Preliminary Under DRAFT

Table L25. Volatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-17	CFTP-17	CFTP-18	CFTP-18	CFTP-19	CFTP-19	CFTP-20	CFTP-20	CFTP-21	CFTP-21
			Sample Date:		25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016
			Sample Depth (ft-bls):		10 - 12	2 - 4	10 - 12	2 - 4	10 - 12	2 - 4	10 - 12	2 - 4	10 - 12	2 - 4
			Sample Designation:		CFTP-17-SO-10-12	CFTP-17-SO-2-4	CFTP-18-SO-10-12	CFTP-18-SO-2-4	CFTP-19-SO-10-12	CFTP-19-SO-2-4	CFTP-20-SO-10-12	CFTP-20-SO-2-4	CFTP-21-SO-10-12	CFTP-21-SO-2-4
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit										
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00042 U	0.00039 U	0.00034 U	0.00031 U	0.00045 U	0.00052 U	0.00031 U	0.00032 U	0.00035 U	0.0004 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00011 U	0.0001 U	0.000088	0.000079	0.00012 U	0.00013 U	0.000079	0.000081	0.00009	0.0001 U
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00028 U	0.00026 U	0.00023 U	0.0002 U	0.0003 U	0.00035 U	0.00021 U	0.00021 U	0.00023 U	0.00027 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00037 U	0.00034 U	0.0003 U	0.00027 U	0.00039 U	0.00045 U	0.00027 U	0.00028 U	0.00031 U	0.00035 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00042 U	0.00039 U	0.00034 U	0.00031 U	0.00045 U	0.00052 U	0.00031 U	0.00032 U	0.00035 U	0.0004 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L25. Volatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-22	CFTP-22	CFTP-23	CFTP-23	CFTP-23
			Sample Date:		25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016
			Sample Depth (ft-bls):		10 - 12	2 - 4	10 - 12	2 - 4	2 - 4
			Sample Designation:		CFTP-22-SO-10-12	CFTP-22-SO-2-4	CFTP-23-SO-10-12	CFTP-23-SO-2-4	CFTP-DUP24-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit					
1,1,1-Trichloroethane	810	3600	0.28	mg/kg	0.0004 U	0.0004 U	0.00035 U	0.0003 U	0.00031 U
1,1,2,2-Tetrachloroethane	0.6	2.7	0.00003	mg/kg	0.00018 U	0.00018 U	0.00016 U	0.00013 U	0.00014 U
1,1,2-Trichloro-1,2,2-trifluoroethane	4000	17000	14	mg/kg	0.00046 U	0.00046 U	0.00041 U	0.00035 U	0.00035 U
1,1,2-Trichloroethane	0.15	0.63	0.000013	mg/kg	0.00029 U	0.00029 U	0.00026 U	0.00022 U	0.00023 U
1,1-Dichloroethane	3.6	16	0.00078	mg/kg	0.00036 U	0.00035 U	0.00031 U	0.00027 U	0.00027 U
1,1-Dichloroethene	23	100	0.01	mg/kg	0.00043 U	0.00043 U	0.00038 U	0.00033 U	0.00033 U
1,2,3-Trichlorobenzene	6.3	93	0.0021	mg/kg	0.00012 U	0.00011 U	0.0001 U	0.000087 U	0.000089
1,2,4-Trichlorobenzene	5.8	26	0.0012	mg/kg	0.00034 U	0.00033 U	0.00029 U	0.00025 U	0.00026 U
1,2-Dibromo-3-Chloropropane	0.0053	0.064	0.00000014	mg/kg	0.00049 U	0.00049 U	0.00043 U	0.00037 U	0.00038 U
1,2-Dichlorobenzene	180	930	0.03	mg/kg	0.00015 U	0.00015 U	0.00013 U	0.00011 U	0.00011 U
1,2-Dichloroethane	0.46	2	0.000048	mg/kg	0.00012 U	0.00011 U	0.0001 U	0.000087 U	0.000089
1,2-Dichloropropane	1	4.4	0.00015	mg/kg	0.00018 U	0.00018 U	0.00016 U	0.00013 U	0.00014 U
1,3-Dichlorobenzene	--	--	--	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.000095 U	0.000097 U
1,4-Dichlorobenzene	2.6	11	0.00046	mg/kg	0.00014 U	0.00014 U	0.00012 U	0.0001 U	0.0001 U
2-Butanone (MEK)	2700	19000	0.12	mg/kg	0.00081 U	0.0008 U	0.0017 J	0.0027 J	0.003 J
2-Hexanone	20	130	0.00088	mg/kg	0.00099 U	0.00098 U	0.00087 U	0.00075 U	0.00076 U
4-Methyl-2-pentanone (MIBK)	3300	14000	0.14	mg/kg	0.0023 U	0.0023 U	0.002 U	0.0018 U	0.0018 U
Acetone	6100	67000	0.29	mg/kg	0.014	0.033	0.01	0.041	0.062
Benzene	1.2	5.1	0.00023	mg/kg	0.00021 U	0.00021 U	0.00018 U	0.00016 U	0.00016 U
Bromoform	19	86	0.00087	mg/kg	0.00014 U	0.00014 U	0.00012 U	0.0001 U	0.0001 U
Bromomethane	0.68	3	0.00019	mg/kg	0.00034 U	0.00033 U	0.00029 U	0.00025 U	0.00026 U
Carbon disulfide	77	350	0.024	mg/kg	0.00045 U	0.00045 U	0.0004 U	0.00034 U	0.00035 U
Carbon tetrachloride	0.65	2.9	0.00018	mg/kg	0.00045 U	0.00045 U	0.0004 U	0.00034 U	0.00035 U
Chlorobenzene	28	130	0.0053	mg/kg	0.00015 U	0.00015 U	0.00013 U	0.00011 U	0.00011 U
Chlorobromomethane	15	63	0.0021	mg/kg	0.00018 U	0.00018 U	0.00016 U	0.00013 U	0.00014 U
Chlorodibromomethane	8.3	39	0.00023	mg/kg	0.00016 U	0.00016 U	0.00014 U	0.00012 U	0.00012 U
Chloroethane	1400	5700	0.59	mg/kg	0.00037 U	0.00036 U	0.00032 U	0.00028 U	0.00028 U
Chloroform	0.32	1.4	0.000061	mg/kg	0.00022 U	0.00022 U	0.00019 U	0.00017 U	0.00017 U
Chloromethane	11	46	0.0049	mg/kg	0.0004 U	0.0004 U	0.00035 U	0.0003 U	0.00031 U
cis-1,2-Dichloroethene	16	230	0.0011	mg/kg	0.00023 U	0.00023 U	0.0002 U	0.00017 U	0.00018 U
cis-1,3-Dichloropropene	--	--	--	mg/kg	0.00016 U	0.00016 U	0.00014 U	0.00012 U	0.00012 U
Cyclohexane	650	2700	1.3	mg/kg	0.00048 U	0.00048 U	0.00042 U	0.00037 U	0.00037 U
Dichlorobromomethane	0.29	1.3	0.000036	mg/kg	0.0004 U	0.0004 U	0.00035 U	0.0003 U	0.00031 U
Dichlorodifluoromethane	8.7	37	0.03	mg/kg	0.00034 U	0.00033 U	0.00029 U	0.00025 U	0.00026 U
Ethylbenzene	5.8	25	0.0017	mg/kg	0.00019 U	0.00019 U	0.00017 U	0.00014 U	0.00015 U
Ethylene Dibromide	0.036	0.16	0.0000021	mg/kg	0.00013 U	0.00012 U	0.00011 U	0.000095 U	0.000097 U
Isopropylbenzene	190	990	0.074	mg/kg	0.00018 U	0.00018 U	0.00016 U	0.00013 U	0.00014 U
Methyl acetate	7800	120000	0.41	mg/kg	0.00095 U	0.00094 U	0.00083 U	0.0014 J	0.0016 J
Methyl tert-butyl ether	47	210	0.0032	mg/kg	0.00018 U	0.00018 U	0.00016 U	0.00013 U	0.00014 U
Methylcyclohexane	--	--	--	mg/kg	0.00053 U	0.00052 U	0.0005 J	0.0004 U	0.0004 U
Methylene Chloride	35	320	0.0027	mg/kg	0.00034 U	0.00033 U	0.00029 U	0.00025 U	0.00026 U
m-Xylene & p-Xylene	56	240	--	mg/kg	0.00012 U	0.00011 U	0.0001 U	0.000087 U	0.000089
o-Xylene	65	280	0.019	mg/kg	0.00017 U	0.00017 U	0.00015 U	0.00013 U	0.00013 U
Styrene	600	3500	0.13	mg/kg	0.00016 U	0.00016 U	0.00014 U	0.00012 U	0.00012 U
Tetrachloroethene	8.1	39	0.0018	mg/kg	0.00029 U	0.00029 U	0.00026 U	0.00022 U	0.00023 U
Toluene	490	4700	0.076	mg/kg	0.0002 U	0.0002 U	0.00047 J	0.00015 U	0.00015 U

Preliminary Under EPA Review

Table L25. Volatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-22	CFTP-22	CFTP-23	CFTP-23	CFTP-23
			Sample Date:		25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016
			Sample Depth (ft-bls):		10 - 12	2 - 4	10 - 12	2 - 4	2 - 4
			Sample Designation:		CFTP-22-SO-10-12	CFTP-22-SO-2-4	CFTP-23-SO-10-12	CFTP-23-SO-2-4	CFTP-DUP24-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit					
trans-1,2-Dichloroethene	160	2300	0.011	mg/kg	0.00041 U	0.00041 U	0.00036 U	0.00031 U	0.00031 U
trans-1,3-Dichloropropene	--	--	--	mg/kg	0.00011 U	0.0001 U	0.000092	0.000079	0.000081
Trichloroethene	0.41	1.9	0.0001	mg/kg	0.00027 U	0.00027 U	0.00024 U	0.00021 U	0.00021 U
Trichlorofluoromethane	2300	35000	0.33	mg/kg	0.00036 U	0.00035 U	0.00031 U	0.00027 U	0.00027 U
Vinyl chloride	0.059	1.7	0.0000065	mg/kg	0.00041 U	0.00041 U	0.00036 U	0.00031 U	0.00031 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L26. Semolatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFTP-17	CFTP-17	CFTP-18	CFTP-18	CFTP-18	CFTP-19	CFTP-19	CFTP-19	CFTP-20
					Sample Date:	25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016
					Sample Depth (ft-bls):	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5
					Sample Designation:	CFTP-17-SO-0-0.5	CFTP-17-SO-10-12	CFTP-17-SO-2-4	CFTP-18-SO-0-0.5	CFTP-18-SO-10-12	CFTP-18-SO-2-4	CFTP-19-SO-0-0.5	CFTP-19-SO-10-12	CFTP-19-SO-2-4	CFTP-20-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit										
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.035 U	0.031 U	0.032 U	0.052 U	0.031 U	0.033 U	0.03 U	0.03 U	0.032 U	0.034 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.03 U	0.027 U	0.028 U	0.045 U	0.027 U	0.029 U	0.027 U	0.026 U	0.028 U	0.03 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.11 U	0.097 U	0.1 U	0.16 U	0.099 U	0.1 U	0.095 U	0.094 U	0.099 U	0.11 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.017 U	0.015 U	0.015 U	0.025 U	0.015 U	0.016 U	0.015 U	0.014 U	0.015 U	0.016 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.039 U	0.034 U	0.035 U	0.057 U	0.035 U	0.036 U	0.034 U	0.033 U	0.035 U	0.038 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.041 U	0.036 U	0.037 U	0.061 U	0.037 U	0.038 U	0.035 U	0.035 U	0.037 U	0.04 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.012 U	0.01 U	0.011 U	0.017 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0097 U	0.0086 U	0.0088 U	0.014 U	0.0087 U	0.0091 U	0.0084 U	0.0083 U	0.0088 U	0.0095 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.09 U	0.08 U	0.082 U	0.13 U	0.081 U	0.085 U	0.078 U	0.077 U	0.082 U	0.088 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.31 UJ	0.27 UJ	0.28 UJ	0.46 UJ	0.28 UJ	0.29 UJ	0.27 UJ	0.26 UJ	0.28 UJ	0.3 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.016 U	0.014 U	0.015 U	0.024 U	0.015 U	0.015 U	0.014 U	0.014 U	0.015 U	0.016 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.022 U	0.019 U	0.02 U	0.032 U	0.02 U	0.021 U	0.019 U	0.019 U	0.02 U	0.021 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0093 U	0.0082 U	0.0085 U	0.014 U	0.0084 U	0.0087 U	0.0081 U	0.0079 U	0.0084 U	0.0091 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.01 U	0.0092 U	0.0095 U	0.016 U	0.0094 U	0.0098 U	0.0091 U	0.0089 U	0.0094 U	0.01 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.009 U	0.008 U	0.0082 U	0.013 U	0.0081 U	0.0085 U	0.0079 U	0.0077 U	0.0082 U	0.0088 U
2-Methylphenol	320	4100	0.075	mg/kg	0.018 U	0.016 U	0.016 U	0.027 U	0.016 U	0.017 U	0.016 U	0.015 U	0.016 U	0.017 U
2-Nitroaniline	63	800	0.008	mg/kg	0.014 U	0.012 U	0.012 U	0.02 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U
2-Nitrophenol	--	--	--	mg/kg	0.014 U	0.012 U	0.013 U	0.02 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.011 U	0.0097 U	0.0099 U	0.068 J	0.0098 U	0.01 U	0.0095 U	0.0093 U	0.0099 U	0.011 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.046 U	0.041 U	0.042 U	0.068 U	0.041 U	0.043 U	0.04 U	0.039 U	0.041 U	0.045 U
3-Nitroaniline	--	--	--	mg/kg	0.012 U	0.011 U	0.011 U	0.018 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.012 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.11 U	0.097 U	0.1 U	0.16 U	0.098 U	0.1 U	0.095 U	0.093 U	0.099 U	0.11 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.013 U	0.011 U	0.012 U	0.019 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.013 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.018 U	0.016 U	0.016 U	0.026 U	0.016 U	0.017 U	0.015 U	0.015 U	0.016 U	0.017 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.011 U	0.0093 U	0.0096 U	0.016 U	0.0095 U	0.0099 U	0.0092 U	0.009 U	0.0095 U	0.01 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.011 U	0.011 U	0.018 U	0.011 U	0.012 U	0.011 U	0.01 U	0.011 U	0.012 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.015 U	0.014 U	0.014 U	0.023 U	0.014 U	0.015 U	0.013 U	0.013 U	0.014 U	0.015 U
4-Nitrophenol	--	--	--	mg/kg	0.2 U	0.17 U	0.18 U	0.29 U	0.18 U	0.19 U	0.17 U	0.17 U	0.18 U	0.19 U
Acenaphthene	360	4500	0.55	mg/kg	0.0099 U	0.0088 U	0.009 U	0.019 J	0.0089 U	0.0093 U	0.0086 U	0.0085 U	0.009 U	0.016 J
Acenaphthylene	--	--	--	mg/kg	0.011 U	0.0093 U	0.0096 U	0.016 U	0.0095 U	0.0099 U	0.0092 U	0.009 U	0.0095 U	0.01 U
Acetophenone	780	12000	0.058	mg/kg	0.0089 U	0.0079 U	0.0081 U	0.024 J	0.008 U	0.0084 U	0.0078 U	0.0076 U	0.0081 U	0.0087 U
Anthracene	1800	23000	5.8	mg/kg	0.039 U	0.034 U	0.035 U	0.058 U	0.035 U	0.037 U	0.034 U	0.033 U	0.035 U	0.038 U
Atrazine	2.4	10	0.0002	mg/kg	0.018 U	0.016 U	0.017 U	0.027 U	0.016 U	0.017 U	0.016 U	0.016 U	0.017 U	0.018 U
Benzaldehyde	170	820	0.0041	mg/kg	0.031 U	0.028 U	0.028 U	0.047 U	0.028 U	0.029 U	0.027 U	0.027 U	0.028 U	0.031 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.066	0.03 U	0.031 U	0.14	0.031 U	0.032 U	0.046	0.029 U	0.031 U	**0.24**
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	**0.083**	0.011 U	0.011 U	**0.54**	0.011 U	0.012 U	**0.053**	0.011 U	0.011 U	**0.38**
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	**0.25**	0.015 J	0.015 U	**1.5**	0.014 U	0.015 U	0.14	0.014 U	0.018 J	**0.83**
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.12 J	0.021 U	0.021 U	0.81	0.021 U	0.022 U	0.066 J	0.02 U	0.021 U	0.51
Benzo[k]fluoranthene	1.6	29	0.4	mg/kg	0.082	0.016 U	0.016 U	0.5	0.016 U	0.017 U	0.052	0.015 U	0.016 U	0.32
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.013 U	0.011 U	0.012 U	0.019 U	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0097 U	0.0086 U	0.0088 U	0.014 U	0.0087 U	0.0091 U	0.0084 U	0.0083 U	0.0088 U	0.0095 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.016 U	0.014 U	0.015 U	0.024 U	0.014 U	0.015 U	0.016 J	0.014 U	0.014 U	0.016 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.013 U	0.011 U	0.012 U	0.019 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U
Caprolactam	3100	40000	0.25	mg/kg	0.029 U	0.026 U	0.027 U	0.044 U	0.027 U	0.028 U	0.026 U	0.025 U	0.027 U	0.029 U
Carbazole	--	--	--	mg/kg	0.014 J	0.009 U	0.0093 U	0.086 J	0.0091 U	0.0096 U	0.0088 U	0.0087 U	0.0092 U	0.044 J
Chrysene	16	290	1.2	mg/kg	0.16 J	0.0099 U	0.01 U	0.46 J	0.01 U	0.01 U	0.09 J	0.0095 U	0.013 J	0.52

Preliminary - Under EPA ARCO MDEQ Review

Table L26. Semolatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFTP-17 Sample Date: 25 Aug 2016 Sample Depth (ft-bls): 0 - 0.5 Sample Designation: CFTP-17-SO-0-0.5	CFTP-17 25 Aug 2016 10 - 12 CFTP-17-SO-10-12	CFTP-17 25 Aug 2016 2 - 4 CFTP-17-SO-2-4	CFTP-18 26 Aug 2016 0 - 0.5 CFTP-18-SO-0-0.5	CFTP-18 26 Aug 2016 10 - 12 CFTP-18-SO-10-12	CFTP-18 26 Aug 2016 2 - 4 CFTP-18-SO-2-4	CFTP-19 25 Aug 2016 0 - 0.5 CFTP-19-SO-0-0.5	CFTP-19 25 Aug 2016 10 - 12 CFTP-19-SO-10-12	CFTP-19 25 Aug 2016 2 - 4 CFTP-19-SO-2-4	CFTP-20 25 Aug 2016 0 - 0.5 CFTP-20-SO-0-0.5
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.021 U	0.019 U	0.019 U	**0.17**	0.019 U	0.02 U	0.019 U	0.018 U	0.019 U	**0.11**
Dibenzofuran	7.3	100	0.015	mg/kg	0.012 U	0.011 U	0.011 U	0.018 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.012 U	0.01 U	0.011 U	0.017 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U
Dimethyl phthalate	--	--	--	mg/kg	0.012 U	0.011 U	0.011 U	0.018 U	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U	0.012 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.012 U	0.011 U	0.011 U	0.22 J	0.011 U	0.012 U	0.011 U	0.01 U	0.011 U	0.012 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.021 U	0.018 U	0.019 U	0.031 U	0.019 U	0.02 U	0.018 U	0.018 U	0.019 U	0.02 U
Fluoranthene	240	3000	8.9	mg/kg	0.11 J	0.011 U	0.011 U	0.81	0.011 U	0.011 U	0.07 J	0.01 U	0.011 J	0.44
Fluorene	240	3000	0.54	mg/kg	0.0089 U	0.0079 U	0.0081 U	0.022 J	0.008 U	0.0084 U	0.0078 U	0.0076 U	0.0081 U	0.011 J
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.017 U	0.015 U	0.015 U	0.025 U	0.015 U	0.016 U	0.014 U	0.014 U	0.015 U	0.016 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.012 U	0.01 U	0.01 U	0.017 U	0.01 U	0.011 U	0.01 U	0.0098 U	0.01 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.026 U	0.023 U	0.023 U	0.038 U	0.023 U	0.024 U	0.022 U	0.022 U	0.023 U	0.025 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.015 U	0.013 U	0.014 U	0.022 U	0.013 U	0.014 U	0.013 U	0.013 U	0.014 U	0.015 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.12	0.024 U	0.025 U	**0.86**	0.025 U	0.026 U	0.076	0.023 U	0.025 U	**0.55**
Isophorone	570	2400	0.026	mg/kg	0.0088 U	0.0078 U	0.008 U	0.013 U	0.0079 U	0.0083 U	0.0077 U	0.0075 U	0.008 U	0.0086 U
Naphthalene	3.8	17	0.00054	mg/kg	0.01 U	0.0092 U	0.0095 U	0.016 U	0.0094 U	0.0098 U	0.0091 U	0.0089 U	0.0094 U	0.01 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.013 U	0.011 U	0.012 U	0.019 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.013 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.014 U	0.012 U	0.013 U	0.02 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.037 U	0.033 U	0.034 U	0.055 U	0.033 U	0.035 U	0.032 U	0.032 U	0.034 U	0.036 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.05 U	0.044 U	0.045 U	0.074 U	0.045 U	0.047 U	0.043 U	0.042 U	0.045 U	0.048 U
Phenanthrene	--	--	--	mg/kg	0.052 J	0.0097 U	0.0099 U	0.28 J	0.0098 U	0.01 U	0.036 J	0.0093 U	0.0099 U	0.21 J
Phenol	1900	25000	0.33	mg/kg	0.013 U	0.012 U	0.012 U	0.02 U	0.012 U	0.013 U	0.012 U	0.011 U	0.012 U	0.013 U
Pyrene	180	2300	1.3	mg/kg	0.11 J	0.016 U	0.017 U	0.32 J	0.017 U	0.017 U	0.06 J	0.016 U	0.017 U	0.39 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA MDE Review

Table L26. Semolatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFTP-20	CFTP-20	CFTP-21	CFTP-21	CFTP-21	CFTP-22	CFTP-22	CFTP-22	CFTP-23	CFTP-23
					Sample Date:	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016
					Sample Depth (ft-bls):	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12
					Sample Designation:	CFTP-20-SO-10-12	CFTP-20-SO-2-4	CFTP-21-SO-0-0.5	CFTP-21-SO-10-12	CFTP-21-SO-2-4	CFTP-22-SO-0-0.5	CFTP-22-SO-10-12	CFTP-22-SO-2-4	CFTP-23-SO-0-0.5	CFTP-23-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.03 U	0.031 U	0.031 U	0.03 U	0.031 U	0.033 U	0.033 U	0.032 U	0.044 UJ	0.031 U
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.026 U	0.027 U	0.027 U	0.026 U	0.027 U	0.029 U	0.029 U	0.028 U	0.038 U	0.027 U
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.093 U	0.097 U	0.097 U	0.093 U	0.096 U	0.1 U	0.1 U	0.1 U	0.14 U	0.096 U
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U	0.016 U	0.016 U	0.015 U	0.021 U	0.015 U
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.033 U	0.034 U	0.034 U	0.033 U	0.034 U	0.037 U	0.037 U	0.035 U	0.048 UJ	0.034 U
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.034 U	0.036 U	0.036 U	0.035 U	0.036 U	0.039 U	0.039 U	0.037 U	0.051 UJ	0.036 U
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.011 U	0.011 U	0.011 U	0.015 UJ	0.01 U
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0082 U	0.0086 U	0.0085 U	0.0082 U	0.0085 U	0.0092 U	0.0092 U	0.0088 U	0.012 UJ	0.0084 U
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.076 U	0.08 U	0.08 U	0.076 U	0.079 U	0.086 U	0.086 U	0.082 U	0.11 UJ	0.079 U
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.26 UJ	0.27 UJ	0.27 UJ	0.26 UJ	0.27 UJ	0.3 UJ	0.29 UJ	0.28 UJ	0.39 UJ	0.27 UJ
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.015 U	0.015 U	0.02 UJ	0.014 U
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.018 U	0.019 U	0.019 U	0.019 U	0.019 U	0.021 U	0.021 U	0.02 U	0.027 UJ	0.019 U
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0079 U	0.0082 U	0.0082 U	0.0079 U	0.0082 U	0.0089 U	0.0088 U	0.0085 U	0.012 UJ	0.0081 U
2-Chlorophenol	39	580	0.0089	mg/kg	0.0088 U	0.0092 U	0.0092 U	0.0088 U	0.0091 U	0.0099 U	0.0099 U	0.0095 U	0.013 UJ	0.0091 U
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0077 U	0.008 U	0.008 U	0.0077 U	0.0079 U	0.0086 U	0.0086 U	0.0082 U	0.014 J-	0.0079 U
2-Methylphenol	320	4100	0.075	mg/kg	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U	0.017 U	0.017 U	0.016 U	0.022 UJ	0.016 U
2-Nitroaniline	63	800	0.008	mg/kg	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.013 U	0.012 U	0.017 U	0.012 U
2-Nitrophenol	--	--	--	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.013 U	0.017 UJ	0.012 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.0092 U	0.0097 U	0.0096 U	0.0093 U	0.0096 U	0.01 J	0.01 U	0.0099 U	0.014 UJ	0.0095 U
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.039 U	0.041 U	0.04 U	0.039 U	0.04 U	0.044 U	0.043 U	0.042 U		0.04 U
3-Nitroaniline	--	--	--	mg/kg	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.012 U	0.012 U	0.011 U	0.015 UJ	0.011 U
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.092 U	0.097 U	0.096 U	0.093 U	0.096 U	0.1 U	0.1 U	0.099 U	0.14 UJ	0.095 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.016 U	0.011 U
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.017 U	0.017 U	0.016 U	0.022 UJ	0.015 U
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0089 U	0.0093 U	0.0093 U	0.0089 U	0.0092 U	0.01 U	0.01 U	0.0096 U	0.013 UJ	0.0092 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.012 U	0.012 U	0.011 U	0.015 UJ	0.011 U
4-Nitroaniline	25	110	0.0016	mg/kg	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U	0.015 U	0.015 U	0.014 U	0.019 UJ	0.014 U
4-Nitrophenol	--	--	--	mg/kg	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.19 U	0.19 U	0.18 U	0.25 U	0.17 U
Acenaphthene	360	4500	0.55	mg/kg	0.0084 U	0.0088 U	0.0087 U	0.0084 U	0.0087 U	0.0095 U	0.0094 U	0.009 U	0.042 J-	0.0087 U
Acenaphthylene	--	--	--	mg/kg	0.0089 U	0.0093 U	0.0093 U	0.0089 U	0.0092 U	0.01 U	0.01 U	0.0096 U	0.013 UJ	0.0092 U
Acetophenone	780	12000	0.058	mg/kg	0.0075 U	0.0079 U	0.0079 U	0.0076 U	0.0078 U	0.0085 U	0.0085 U	0.0081 U	0.019 J-	0.0078 U
Anthracene	1800	23000	5.8	mg/kg	0.033 U	0.034 U	0.034 U	0.033 U	0.034 U	0.037 U	0.037 U	0.035 U	0.089 J-	0.034 U
Atrazine	2.4	10	0.0002	mg/kg	0.015 U	0.016 U	0.016 U	0.015 U	0.016 U	0.017 U	0.017 U	0.017 U	0.023 UJ	0.016 U
Benzaldehyde	170	820	0.0041	mg/kg	0.026 U	0.028 U	0.028 U	0.027 U	0.027 U	0.03 U	0.03 U	0.028 U	0.06 J-	0.027 U
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.029 U	0.03 U	0.03 U	0.029 U	0.03 U	0.033 U	0.032 U	0.031 U	**0.55 J-**	0.03 U
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.01 U	0.011 U	**0.029 J**	0.011 U	0.011 J	**0.027 J**	0.012 U	0.011 U	**0.85 J-**	0.011 U
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.014 U	0.014 U	0.075	0.014 U	0.028 J	0.079	0.015 U	0.015 U	**2.7 J-**	0.014 U
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.02 U	0.021 U	0.033 J	0.02 U	0.021 U	0.036 J	0.022 U	0.021 U	1.3	0.021 U
Benzo[k]fluoranthene	1.6	29	0.4	mg/kg	0.015 U	0.016 U	0.028 J	0.015 U	0.016 U	0.028 J	0.017 U	0.016 U	0.74 J-	0.016 U
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.016 UJ	0.011 U
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0082 U	0.0086 U	0.0085 U	0.0082 U	0.0085 U	0.0092 U	0.0092 U	0.0088 U	0.012 UJ	0.0084 U
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.015 U	0.015 U	0.02 UJ	0.014 U
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.016 UJ	0.011 U
Caprolactam	3100	40000	0.25	mg/kg	0.025 U	0.026 U	0.026 U	0.025 U	0.026 U	0.028 U	0.028 U	0.027 U	0.037 UJ	0.026 U
Carbazole	--	--	--	mg/kg	0.0086 U	0.009 U	0.009 U	0.0086 U	0.0089 U	0.0097 U	0.0097 U	0.0092 U	0.13 J-	0.0089 U
Chrysene	16	290	1.2	mg/kg	0.0094 U	0.0099 U	0.045 J	0.0095 U	0.018 J	0.053 J	0.011 U	0.01 U	1.5 J-	0.0097 U

Preliminary - Under EPA MDEQ Review

Table L26. Semolatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: / Sample Date: / Sample Depth (ft-bls): / Sample Designation:									
					CFTP-20 25 Aug 2016 10 - 12 CFTP-20-SO-10-12	CFTP-20 25 Aug 2016 2 - 4 CFTP-20-SO-2-4	CFTP-21 25 Aug 2016 0 - 0.5 CFTP-21-SO-0-0.5	CFTP-21 25 Aug 2016 10 - 12 CFTP-21-SO-10-12	CFTP-21 25 Aug 2016 2 - 4 CFTP-21-SO-2-4	CFTP-22 25 Aug 2016 0 - 0.5 CFTP-22-SO-0-0.5	CFTP-22 25 Aug 2016 10 - 12 CFTP-22-SO-10-12	CFTP-22 25 Aug 2016 2 - 4 CFTP-22-SO-2-4	CFTP-23 26 Aug 2016 0 - 0.5 CFTP-23-SO-0-0.5	CFTP-23 26 Aug 2016 10 - 12 CFTP-23-SO-10-12
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.02 U	0.02 U	0.019 U	**0.27**	0.019 U
Dibenzofuran	7.3	100	0.015	mg/kg	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.023 J-	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg	0.0099 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.011 U	0.011 U	0.011 U	0.015 UJ	0.01 U
Dimethyl phthalate	--	--	--	mg/kg	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.015 UJ	0.01 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg	0.01 U	0.011 U	0.011 U	0.01 U	0.011 U	0.012 U	0.012 U	0.011 U	0.015 UJ	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.02 U	0.02 U	0.019 U	0.026 UJ	0.018 U
Fluoranthene	240	3000	8.9	mg/kg	0.01 U	0.011 U	0.033 J	0.01 U	0.013 J	0.026 J	0.012 U	0.011 U	1 J-	0.011 U
Fluorene	240	3000	0.54	mg/kg	0.0075 U	0.0079 U	0.0079 U	0.0076 U	0.0078 U	0.0085 U	0.0085 U	0.0081 U	0.038 J-	0.0078 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U	0.016 U	0.016 U	0.015 U	0.021 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg	0.0097 U	0.01 U	0.01 U	0.0098 U	0.01 U	0.011 U	0.011 U	0.01 U	0.014 UJ	0.01 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg	0.022 U	0.023 U	0.023 U	0.022 U	0.022 U	0.024 U	0.024 U	0.023 U	0.032 UJ	0.022 U
Hexachloroethane	1.8	8	0.0002	mg/kg	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.019 UJ	0.013 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg	0.023 U	0.024 U	0.032 J	0.023 U	0.024 U	0.04	0.026 U	0.025 U	**1.4**	0.024 U
Isophorone	570	2400	0.026	mg/kg	0.0074 U	0.0078 U	0.0078 U	0.0075 U	0.0077 U	0.0084 U	0.0084 U	0.008 U	0.011 UJ	0.0077 U
Naphthalene	3.8	17	0.00054	mg/kg	0.0088 U	0.0092 U	0.0092 U	0.0088 U	0.0091 U	0.0099 U	0.0099 U	0.0095 U	0.025 J-	0.0091 U
Nitrobenzene	5.1	22	0.000092	mg/kg	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.016 UJ	0.011 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.013 U	0.017 UJ	0.012 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg	0.031 U	0.033 U	0.033 U	0.032 U	0.033 U	0.035 U	0.035 U	0.034 U	0.047 UJ	0.032 U
Pentachlorophenol	1	4	0.000057	mg/kg	0.042 U	0.044 U	0.044 U	0.042 U	0.044 U	0.047 U	0.047 U	0.045 U	0.062 UJ	0.043 U
Phenanthrene	--	--	--	mg/kg	0.0092 U	0.0097 U	0.018 J	0.0093 U	0.0098 J	0.017 J	0.01 U	0.0099 U	0.49 J-	0.0095 U
Phenol	1900	25000	0.33	mg/kg	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.013 U	0.012 U	0.017 UJ	0.012 U
Pyrene	180	2300	1.3	mg/kg	0.016 U	0.016 U	0.036 J	0.016 U	0.016 U	0.028 J	0.018 U	0.017 U	1 J-	0.016 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA MDEQ Review

Table L26. Semolatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFTP-23	CFTP-23
					Sample Date:	26 Aug 2016	26 Aug 2016
					Sample Depth (ft-bls):	2 - 4	2 - 4
					Sample Designation:	CFTP-23-SO-2-4	CFTP-DUP24-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit			
1,1'-Biphenyl	4.7	20	0.00087	mg/kg	0.032 U	0.032 U	
1,2,4,5-Tetrachlorobenzene	2.3	35	0.00079	mg/kg	0.028 U	0.028 U	
1,4-Dioxane	5.3	24	0.000094	mg/kg	0.1 U	0.1 U	
2,2'-oxybis[1-chloropropane]	310	4700	0.026	mg/kg	0.015 U	0.016 U	
2,3,4,6-Tetrachlorophenol	190	2500	0.018	mg/kg	0.035 U	0.036 U	
2,4,5-Trichlorophenol	630	8200	0.4	mg/kg	0.037 U	0.038 U	
2,4,6-Trichlorophenol	6.3	82	0.0012	mg/kg	0.011 U	0.011 U	
2,4-Dichlorophenol	19	250	0.0023	mg/kg	0.0088 U	0.0089 U	
2,4-Dimethylphenol	130	1600	0.042	mg/kg	0.082 U	0.083 U	
2,4-Dinitrophenol	13	160	0.0044	mg/kg	0.28 UJ	0.29 UJ	
2,4-Dinitrotoluene	1.7	7.4	0.00032	mg/kg	0.015 U	0.015 U	
2,6-Dinitrotoluene	0.36	1.5	0.000067	mg/kg	0.02 U	0.02 U	
2-Chloronaphthalene	480	6000	0.39	mg/kg	0.0085 U	0.0086 U	
2-Chlorophenol	39	580	0.0089	mg/kg	0.0095 U	0.0096 U	
2-Methylnaphthalene	24	300	0.019	mg/kg	0.0083 U	0.0083 U	
2-Methylphenol	320	4100	0.075	mg/kg	0.016 U	0.016 U	
2-Nitroaniline	63	800	0.008	mg/kg	0.012 U	0.012 U	
2-Nitrophenol	--	--	--	mg/kg	0.013 U	0.013 U	
3 & 4 Methylphenol	--	--	--	mg/kg	0.0099 U	0.01 U	
3,3'-Dichlorobenzidine	1.2	5.1	0.00082	mg/kg	0.042 U	0.042 U	
3-Nitroaniline	--	--	--	mg/kg	0.011 U	0.011 U	
4,6-Dinitro-2-methylphenol	0.51	6.6	0.00026	mg/kg	0.1 U	0.1 U	
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.012 U	0.012 U	
4-Chloro-3-methylphenol	630	8200	0.17	mg/kg	0.016 U	0.016 U	
4-Chloroaniline	2.7	11	0.00016	mg/kg	0.0096 U	0.0097 U	
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.011 U	0.011 U	
4-Nitroaniline	25	110	0.0016	mg/kg	0.014 U	0.014 U	
4-Nitrophenol	--	--	--	mg/kg	0.18 U	0.18 U	
Acenaphthene	360	4500	0.55	mg/kg	0.009 U	0.0091 U	
Acenaphthylene	--	--	--	mg/kg	0.0096 U	0.0097 U	
Acetophenone	780	12000	0.058	mg/kg	0.0081 U	0.0082 U	
Anthracene	1800	23000	5.8	mg/kg	0.035 U	0.036 U	
Atrazine	2.4	10	0.0002	mg/kg	0.017 U	0.017 U	
Benzaldehyde	170	820	0.0041	mg/kg	0.028 U	0.029 U	
Benzo[a]anthracene	**0.16**	2.9	0.0042	mg/kg	0.031 U	0.032 U	
Benzo[a]pyrene	**0.016**	0.29	0.004	mg/kg	0.011 U	0.011 U	
Benzo[b]fluoranthene	**0.16**	2.9	0.041	mg/kg	0.015 U	0.015 U	
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.021 U	0.022 U	
Benzo[k]fluoranthene	1.6	29	0.4	mg/kg	0.016 U	0.016 U	
Bis(2-chloroethoxy)methane	19	250	0.0013	mg/kg	0.012 U	0.012 U	
Bis(2-chloroethyl)ether	0.23	1	0.0000036	mg/kg	0.0088 U	0.0089 U	
Bis(2-ethylhexyl) phthalate	39	160	1.3	mg/kg	0.015 U	0.015 U	
Butyl benzyl phthalate	290	1200	0.24	mg/kg	0.012 U	0.012 U	
Caprolactam	3100	40000	0.25	mg/kg	0.027 U	0.027 U	
Carbazole	--	--	--	mg/kg	0.0093 U	0.0094 U	
Chrysene	16	290	1.2	mg/kg	0.01 U	0.01 U	

Preliminary - Under EPA and MDEQ Review

Table L26. Semolatile Organic Compounds in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFTP-23	CFTP-23
					Sample Date:	26 Aug 2016	26 Aug 2016
					Sample Depth (ft-bls):	2 - 4	2 - 4
					Sample Designation:	CFTP-23-SO-2-4	CFTP-DUP24-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit			
Dibenz(a,h)anthracene	**0.016**	0.29	0.013	mg/kg		0.019 U	0.02 U
Dibenzofuran	7.3	100	0.015	mg/kg		0.011 U	0.011 U
Diethyl phthalate	5100	66000	0.61	mg/kg		0.011 U	0.011 U
Dimethyl phthalate	--	--	--	mg/kg		0.011 U	0.011 U
Di-n-butyl phthalate	630	8200	0.23	mg/kg		0.011 U	0.011 U
Di-n-octyl phthalate	63	820	5.7	mg/kg		0.019 U	0.019 U
Fluoranthene	240	3000	8.9	mg/kg		0.011 U	0.011 U
Fluorene	240	3000	0.54	mg/kg		0.0081 U	0.0082 U
Hexachlorobenzene	0.21	0.96	0.00012	mg/kg		0.015 U	0.015 U
Hexachlorobutadiene	1.2	5.3	0.00027	mg/kg		0.011 U	0.011 U
Hexachlorocyclopentadiene	0.18	0.75	0.00013	mg/kg		0.023 U	0.024 U
Hexachloroethane	1.8	8	0.0002	mg/kg		0.014 U	0.014 U
Indeno[1,2,3-cd]pyrene	**0.16**	2.9	0.13	mg/kg		0.025 U	0.025 U
Isophorone	570	2400	0.026	mg/kg		0.008 U	0.0081 U
Naphthalene	3.8	17	0.00054	mg/kg		0.0095 U	0.0096 U
Nitrobenzene	5.1	22	0.000092	mg/kg		0.012 U	0.012 U
N-Nitrosodi-n-propylamine	0.078	0.33	0.0000081	mg/kg		0.013 U	0.013 U
N-Nitrosodiphenylamine	110	470	0.067	mg/kg		0.034 U	0.034 U
Pentachlorophenol	1	4	0.000057	mg/kg		0.045 U	0.046 U
Phenanthrene	--	--	--	mg/kg		0.0099 U	0.01 U
Phenol	1900	25000	0.33	mg/kg		0.012 U	0.012 U
Pyrene	180	2300	1.3	mg/kg		0.017 U	0.017 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L27. Metals in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFTP-17	CFTP-17	CFTP-17	CFTP-18	CFTP-18	CFTP-18	CFTP-19	CFTP-19	CFTP-19	CFTP-20	CFTP-20
					Sample Date: 25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016
					Sample Depth (ft-bls): 0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12
					Sample Designation: CFTP-17-SO-0-0.5	CFTP-17-SO-10-12	CFTP-17-SO-2-4	CFTP-18-SO-0-0.5	CFTP-18-SO-10-12	CFTP-18-SO-2-4	CFTP-19-SO-0-0.5	CFTP-19-SO-10-12	CFTP-19-SO-2-4	CFTP-20-SO-0-0.5	CFTP-20-SO-10-12
Aluminum	**7700**	110000	3000	mg/kg	**12500**	**11900**	**12700**	**21300**	**12500**	**7760**	**12000**	5530	**9500**	**17100**	**8490**
Antimony	3.1	47	0.035	mg/kg	0.3 UJ	0.28 UJ	0.31 UJ	0.45 UJ	0.29 UJ	0.3 UJ	0.28 UJ	0.28 UJ	0.3 UJ	0.32 UJ	0.29 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**3**	**6.3**	**3.2**	**6**	**8.6**	**4.7**	**5**	**3.6**	**5.9**	**4.7**	**4.4**
Barium	1500	22000	16	mg/kg	217 J	75.9 J	73.3 J	152 J	105 J	77.1 J	184	58.6	63.8	226	53.1
Beryllium	16	230	1.9	mg/kg	0.25 J	0.53	0.36 J	0.65	0.57	0.25 J	0.41	0.29 J	0.42	0.52	0.25 J
Cadmium	7.1	98	0.069	mg/kg	0.32 U	0.29 U	0.33 U	0.48 U	0.31 U	0.32 U	0.3 U	0.29 U	0.31 U	0.34 U	0.3 U
Calcium	--	--	--	mg/kg	1920	38100	1200	2150	1430	37800	1730	27800	27900	2300	41600
Chromium	--	--	--	mg/kg	8.4	10.4	8.6	15.8	8.4	8.4	9.7	5.7	9.1	10.2	7.2
Cobalt	**2.3**	35	0.027	mg/kg	**4.5 J**	**7.7 J**	**4.9 J**	**6.2 J**	**4.7 J**	**7.8 J**	**5**	**4**	**4.4**	**5.4**	**4.6**
Copper	310	4700	2.8	mg/kg	6 J	23.2 J	14.7 J	25.5 J	20.1 J	13.1 J	7.6	8.4	14.1	7.2	11.9
Cyanide, Total	2.3	15	0.0015	mg/kg	0.25	0.03 U	0.031 J	0.048 U	0.029 U	0.19	0.11	0.03 U	0.05 J	0.45	0.026 U
Iron	**5500**	82000	35	mg/kg	**11200 J**	**17300 J**	**12300 J**	**21800 J**	**20400 J**	**11600 J**	**14700**	**9010**	**13000**	**16300**	**12000**
Lead	400	800	--	mg/kg	7.9 J	14.9 J	6.8 J	13.9 J	7.7 J	6.5 J	13.5 J+	6.1 J+	10.2 J+	11.3 J+	5.9 J+
Magnesium	--	--	--	mg/kg	5940	13900	8420	12500	7780	12500	8350	8800	9940	8770	13400
Manganese	**180**	2600	2.8	mg/kg	**714 J**	**423 J**	**300 J**	**260 J**	**975 J**	**357 J**	**877**	**257**	**266**	**805**	**414**
Mercury	1.1	4.6	0.0033	mg/kg	0.016 J	0.027	0.038	0.031	0.014 J	0.028	0.013 J	0.014 J	0.042	0.034	0.024
Nickel	150	2200	2.6	mg/kg	10.6	12.9	11.2	16.4	9.4	9.7	15.4 J+	7 J+	10.3 J+	13 J+	9.5 J+
Potassium	--	--	--	mg/kg	976	708	476	846	646	488	1070	572	572	1500	604
Selenium	39	580	0.052	mg/kg	0.28 U	0.26 U	0.29 U	0.42 U	0.27 U	0.28 U	0.26 U	0.26 U	0.28 U	0.3 U	0.27 U
Silver	39	580	0.08	mg/kg	0.59 U	0.54 U	0.6 U	0.89 U	0.57 U	0.59 U	0.55 U	0.54 U	0.58 U	0.62 U	0.56 U
Sodium	--	--	--	mg/kg	46.5 J	37.4 U	41.9 U	90.6 J	39.8 U	41.2 U	38.5 U	37.4 U	40 U	44.8 J	38.9 U
Thallium	0.078	1.2	0.0014	mg/kg	0.12 U	0.11 U	0.12 U	0.18 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.13 U	0.11 U
Vanadium	39	580	8.6	mg/kg	9.9 J	11.9 J	6 J	12.8 J	8.7 J	5.8 J	12.9	6.4	7.2	14.7	5.9
Zinc	2300	35000	37	mg/kg	50.1 J	48.5 J	37.4 J	53.7 J	37.5 J	33.7 J	57.4	24.1	36.2	51.7	36.9

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L27. Metals in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFTP-20 Sample Date: 25 Aug 2016 Sample Depth (ft-bls): 2 - 4 Sample Designation: CFTP-20-SO-2-4	CFTP-21 25 Aug 2016 0 - 0.5 CFTP-21-SO-0-0.5	CFTP-21 25 Aug 2016 10 - 12 CFTP-21-SO-10-12	CFTP-21 25 Aug 2016 2 - 4 CFTP-21-SO-2-4	CFTP-22 25 Aug 2016 0 - 0.5 CFTP-22-SO-0-0.5	CFTP-22 25 Aug 2016 10 - 12 CFTP-22-SO-10-12	CFTP-22 25 Aug 2016 2 - 4 CFTP-22-SO-2-4	CFTP-23 26 Aug 2016 0 - 0.5 CFTP-23-SO-0-0.5	CFTP-23 26 Aug 2016 10 - 12 CFTP-23-SO-10-12	CFTP-23 26 Aug 2016 2 - 4 CFTP-23-SO-2-4	CFTP-23 26 Aug 2016 2 - 4 CFTP-DUP24-SO
Aluminum	**7700**	110000	3000	mg/kg	**16800**	**14500**	7110	2080	**18800**	**8070**	**7840**	**18400**	**11800**	**14300 J**	2930 J
Antimony	3.1	47	0.035	mg/kg	0.29 UJ	0.29 UJ	0.27 UJ	0.29 UJ	0.32 UJ	0.29 UJ	0.31 UJ	0.4 UJ	0.27 UJ	0.29 UJ	0.31 UJ
Arsenic	**0.68**	3	0.0015	mg/kg	**5.1**	**3.9**	**4.3**	**0.8 J**	**4.2**	**7.8**	**4.2**	**4.3**	**2.4**	**5 J**	**1 J**
Barium	1500	22000	16	mg/kg	107	176	37.5	18.2	266	102 J	31.4 J	267	166 J	86 J	63.8 J
Beryllium	16	230	1.9	mg/kg	0.59	0.44	0.31 J	0.094 J	0.59	0.36	0.24 J	0.59	0.29 J	0.4 J	0.1 J
Cadmium	7.1	98	0.069	mg/kg	0.3 U	0.3 U	0.28 U	0.31 U	0.34 U	0.31 U	0.33 U	0.42 U	0.29 U	0.31 U	0.33 U
Calcium	--	--	--	mg/kg	1950	2200	29700	421	1980	47100	687	2930	3140	1420 J	9720 J
Chromium	--	--	--	mg/kg	12.1	9.3	6.6	1.5 J	9.6	10.1	6.3	11.3	7	10.9 J	2.9 J
Cobalt	**2.3**	35	0.027	mg/kg	**5.5**	**4.4**	**4.1**	0.63 J	**5**	**5.7 J**	**2.4 J**	**5.3**	**3.2 J**	**5 J**	1.5 J
Copper	310	4700	2.8	mg/kg	25.8	6.7	7.7	17	8.3	15.4 J	9.4 J	7.7	5.8 J	13.6 J	4.4 J
Cyanide, Total	2.3	15	0.0015	mg/kg	0.03 J	0.11	0.034 J	0.066 J	0.085 J	0.03 U	0.05 J-	0.06 J	0.048 J	0.28 J	0.029 UJ
Iron	**5500**	82000	35	mg/kg	**18800**	**13500**	**10200**	2670	**16600**	**12000 J**	**10800 J**	**16000**	**9370 J**	**16000 J**	3650 J
Lead	400	800	--	mg/kg	13.1 J+	8.5 J+	4.4 J+	3.3 J+	10.2 J+	8.5 J	6.2 J	11.8 J+	9.5 J	9 J	2.3 J
Magnesium	--	--	--	mg/kg	10400	6500	14200	977	7060	9770	5950	8550	7850	9550 J	2440 J
Manganese	**180**	2600	2.8	mg/kg	**247**	**521**	**272**	48	**493**	**265 J**	138 J	**736**	**580 J**	**192 J**	**363 J**
Mercury	1.1	4.6	0.0033	mg/kg	0.044	0.015 J	0.021	0.033	0.013 U	0.031	0.027	0.068	0.018	0.024	0.026
Nickel	150	2200	2.6	mg/kg	12.2 J+	10.2 J+	7.7 J+	1.6 J+	11 J+	9.6	6	17 J+	15.6	11.4 J	2.6 J
Potassium	--	--	--	mg/kg	801	908	478	184	1020	711	418	1430	1040	657 J	248 J
Selenium	39	580	0.052	mg/kg	0.27 U	0.27 U	0.25 U	0.27 U	0.3 U	0.27 U	0.29 U	0.37 U	0.25 U	0.27 U	0.31 J
Silver	39	580	0.08	mg/kg	0.56 U	0.56 U	0.52 U	0.57 U	0.63 U	0.57 U	0.61 U	0.78 U	0.53 U	0.57 U	0.61 U
Sodium	--	--	--	mg/kg	63.3 J	38.7 U	36.1 U	39.7 U	57 J	39.2 U	42.5 U	55.1 J	46.7 J	39.7 U	42 U
Thallium	0.078	1.2	0.0014	mg/kg	0.11 U	0.11 U	0.11 U	0.12 U	0.13 U	0.11 U	0.12 U	0.16 U	0.11 U	0.12 U	0.12 U
Vanadium	39	580	8.6	mg/kg	12.7	12.6	5.1	1.9	14.6	7.9 J	4.6 J	16.7	12.6 J	11.1 J	2.1 J
Zinc	2300	35000	37	mg/kg	47.6	47.5	31.2	7.8	62	31.6 J	23.2 J	65.1	46 J	40.9 J	16.6 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and DEQ Review

Table L28. Polychlorinated Biphenyl in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-17	CFTP-17	CFTP-17	CFTP-18	CFTP-18	CFTP-18	CFTP-19	CFTP-19	CFTP-19	CFTP-20
			Sample Date:		25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016
			Sample Depth (ft-bls):		0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5
			Sample Designation:		CFTP-17-SO-0-0.5	CFTP-17-SO-10-12	CFTP-17-SO-2-4	CFTP-18-SO-0-0.5	CFTP-18-SO-10-12	CFTP-18-SO-2-4	CFTP-19-SO-0-0.5	CFTP-19-SO-10-12	CFTP-19-SO-2-4	CFTP-20-SO-0-0.5
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.011 U	0.0098 U	0.01 U	0.016 U	0.0099 U	0.01 U	0.0096 U	0.0094 U	0.01 U	0.011 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.011 U	0.0098 U	0.01 U	0.016 U	0.0099 U	0.01 U	0.0096 U	0.0094 U	0.01 U	0.011 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.011 U	0.0098 U	0.01 U	0.016 U	0.0099 U	0.01 U	0.0096 U	0.0094 U	0.01 U	0.011 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.011 U	0.0098 U	0.01 U	0.016 U	0.0099 U	0.01 U	0.0096 U	0.0094 U	0.01 U	0.011 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.011 U	0.0098 U	0.01 U	0.016 U	0.0099 U	0.01 U	0.0096 U	0.0094 U	0.01 U	0.011 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.011 U	0.01 U	0.01 U	0.017 U	0.01 U	0.011 U	0.0099 U	0.0098 U	0.01 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.011 U	0.01 U	0.01 U	0.017 U	0.01 U	0.011 U	0.0099 U	0.0098 U	0.01 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.011 U	0.01 U	0.01 U	0.017 U	0.01 U	0.011 U	0.0099 U	0.0098 U	0.01 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.011 U	0.01 U	0.01 U	0.017 U	0.01 U	0.011 U	0.0099 U	0.0098 U	0.01 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.011 U	0.01 U	0.01 U	0.017 U	0.01 U	0.011 U	0.0099 U	0.0098 U	0.01 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soi Screening Level

Preliminary - Under EPA and MDEQ Review

Table L28. Polychlorinated Biphenyl in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-20	CFTP-20	CFTP-21	CFTP-21	CFTP-21	CFTP-22	CFTP-22	CFTP-22	CFTP-23	CFTP-23
			Sample Date:		25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016
			Sample Depth (ft-bls):		10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12
			Sample Designation:		CFTP-20-SO-10-12	CFTP-20-SO-2-4	CFTP-21-SO-0-0.5	CFTP-21-SO-10-12	CFTP-21-SO-2-4	CFTP-22-SO-0-0.5	CFTP-22-SO-10-12	CFTP-22-SO-2-4	CFTP-23-SO-0-0.5	CFTP-23-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit										
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.0093 U	0.0098 U	0.0097 U	0.0094 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.014 U	0.0096 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.0093 U	0.0098 U	0.0097 U	0.0094 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.014 U	0.0096 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.0093 U	0.0098 U	0.0097 U	0.0094 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.014 U	0.0096 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.0093 U	0.0098 U	0.0097 U	0.0094 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.014 U	0.0096 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.0093 U	0.0098 U	0.0097 U	0.0094 U	0.0097 U	0.011 U	0.01 U	0.01 U	0.014 U	0.0096 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.0097 U	0.01 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.011 U	0.01 U	0.014 U	0.01 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.0097 U	0.01 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.011 U	0.01 U	0.014 U	0.01 U
Aroclor 1268	--	--	--	mg/kg	0.0097 U	0.01 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.011 U	0.01 U	0.014 U	0.01 U
Aroclor-1262	--	--	--	mg/kg	0.0097 U	0.01 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.011 U	0.01 U	0.014 U	0.01 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.0097 U	0.01 U	0.01 U	0.0097 U	0.01 U	0.011 U	0.011 U	0.01 U	0.014 U	0.01 U

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soi Screening Level

Preliminary - Under EPA and MDEQ Review

Table L28. Polychlorinated Biphenyl in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFTP-23	CFTP-23
				Sample Date:	26 Aug 2016	26 Aug 2016
				Sample Depth (ft-bls):	2 - 4	2 - 4
				Sample Designation:	CFTP-23-SO-2-4	CFTP-DUP24-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit		
Aroclor 1016	0.41	5.1	0.013	mg/kg	0.01 U	0.01 U
Aroclor 1221	0.2	0.83	0.00008	mg/kg	0.01 U	0.01 U
Aroclor 1232	0.17	0.72	0.00008	mg/kg	0.01 U	0.01 U
Aroclor 1242	0.23	0.95	0.0012	mg/kg	0.01 U	0.01 U
Aroclor 1248	0.23	0.95	0.0012	mg/kg	0.01 U	0.01 U
Aroclor 1254	0.12	0.97	0.002	mg/kg	0.01 U	0.011 U
Aroclor 1260	0.24	0.99	0.0055	mg/kg	0.01 U	0.011 U
Aroclor 1268	--	--	--	mg/kg	0.01 U	0.011 U
Aroclor-1262	--	--	--	mg/kg	0.01 U	0.011 U
Polychlorinated biphenyls, Total	0.23	0.94	0.0068	mg/kg	0.01 U	0.011 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soi Screening Level

Preliminary - Under EPA and MDEQ Review

Table L29. Organochlorine Pesticides in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFTP-17 Sample Date: 25 Aug 2016 Sample Depth (ft-bls): 0 - 0.5 Sample Designation: CFTP-17-SO-0-0.5	CFTP-18 26 Aug 2016 0 - 0.5 CFTP-18-SO-0-0.5	CFTP-19 25 Aug 2016 0 - 0.5 CFTP-19-SO-0-0.5	CFTP-20 25 Aug 2016 0 - 0.5 CFTP-20-SO-0-0.5	CFTP-21 25 Aug 2016 0 - 0.5 CFTP-21-SO-0-0.5	CFTP-22 25 Aug 2016 0 - 0.5 CFTP-22-SO-0-0.5	CFTP-23 26 Aug 2016 0 - 0.5 CFTP-23-SO-0-0.5
4,4'-DDD	2.3	9.6	0.0075	mg/kg	0.0011 U	0.0016 U	0.00095 U	0.0011 U	0.00096 U	0.001 U	0.0014 U
4,4'-DDE	2	9.3	0.011	mg/kg	0.0012 U	0.0018 U	0.001 U	0.0012 U	0.0011 U	0.0011 U	0.0015 U
4,4'-DDT	1.9	8.5	0.077	mg/kg	0.00086 U	0.0013 U	0.00075 U	0.00084 U	0.00075 U	0.00082 U	0.0011 U
Aldrin	0.039	0.18	0.00015	mg/kg	0.001 U	0.0015 U	0.00088 U	0.00098 U	0.00089 U	0.00096 U	0.0013 U
alpha-BHC	0.086	0.36	0.000042	mg/kg	0.00076 U	0.0011 U	0.00066 U	0.00074 U	0.00067 U	0.00072 U	0.00095 UJ
alpha-Chlordane	--	--	--	mg/kg	0.0014 U	0.002 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0017 U
beta-BHC	0.3	1.3	0.00015	mg/kg	0.00081 U	0.0012 U	0.0007 U	0.00079 U	0.00071 U	0.00077 U	0.001 U
delta-BHC	--	--	--	mg/kg	0.00091 U	0.0013 U	0.00079 U	0.00089 U	0.0008 U	0.00086 U	0.0011 U
Dieldrin	0.034	0.14	0.000071	mg/kg	0.0011 U	0.0016 U	0.00094 U	0.0011 U	0.00095 U	0.001 U	0.0014 UJ
Endosulfan I	--	--	--	mg/kg	0.0012 U	0.0017 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0014 U
Endosulfan II	--	--	--	mg/kg	0.0013 U	0.0019 U	0.0011 U	0.0013 U	0.0011 U	0.0012 U	0.0016 U
Endosulfan sulfate	--	--	--	mg/kg	0.00097 U	0.0014 U	0.00084 U	0.00095 U	0.00085 U	0.00092 U	0.0012 U
Endrin	1.9	25	0.0092	mg/kg	0.0011 U	0.0016 U	0.00092 U	0.001 U	0.00093 U	0.001 U	0.0013 U
Endrin aldehyde	--	--	--	mg/kg	0.001 U	0.0015 U	0.0009 U	0.001 U	0.00091 U	0.00098 U	0.0013 U
Endrin ketone	--	--	--	mg/kg	0.0012 U	0.0017 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0014 U
gamma-BHC (Lindane)	0.57	2.5	0.00024	mg/kg	0.00074 U	0.0011 U	0.00065 U	0.00073 U	0.00066 U	0.00071 U	0.00093 U
gamma-Chlordane	--	--	--	mg/kg	0.0018 U	0.0027 U	0.0016 U	0.0018 U	0.0016 U	0.0017 U	0.0023 U
Heptachlor	0.13	0.63	0.00012	mg/kg	0.0011 U	0.0016 U	0.00093 U	0.001 U	0.00094 U	0.001 U	0.0013 U
Heptachlor epoxide	0.07	0.33	0.000028	mg/kg	0.0016 U	0.0024 U	0.0014 U	0.0016 U	0.0014 U	0.0015 U	0.002 U
Methoxychlor	32	410	0.2	mg/kg	0.0018 U	0.0026 U	0.0015 U	0.0017 U	0.0016 U	0.0017 U	0.0022 U
Toxaphene	0.49	2.1	0.011	mg/kg	0.024 U	0.036 U	0.021 U	0.024 U	0.021 U	0.023 U	0.03 U

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Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L30. General Chemistry in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-17	CFTP-17	CFTP-17	CFTP-18	CFTP-18	CFTP-18	CFTP-19	CFTP-19	CFTP-19	CFTP-20	CFTP-20
			Sample Date:		25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016
			Sample Depth (ft-bls):		0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12
			Sample Designation:		CFTP-17-SO-0-0.5	CFTP-17-SO-10-12	CFTP-17-SO-2-4	CFTP-18-SO-0-0.5	CFTP-18-SO-10-12	CFTP-18-SO-2-4	CFTP-19-SO-0-0.5	CFTP-19-SO-10-12	CFTP-19-SO-2-4	CFTP-20-SO-0-0.5	CFTP-20-SO-10-12
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
Fluoride	310	4700	12	mg/kg	21.1 J+	9.66 J+	31.9 J+	61.4 J	0.87 J	4.01 J	17.3 J+	1.63 J+	7.69 J+	19.5 J+	3.01 J+

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table L30. General Chemistry in Soil Samples from Borrow Pit Samplings Locations
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFTP-20	CFTP-21	CFTP-21	CFTP-21	CFTP-22	CFTP-22	CFTP-22	CFTP-23	CFTP-23	CFTP-23	CFTP-23
			Sample Date:		25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	25 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016	26 Aug 2016
			Sample Depth (ft-bls):		2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	0 - 0.5	10 - 12	2 - 4	2 - 4
			Sample Designation:		CFTP-20-SO-2-4	CFTP-21-SO-0-0.5	CFTP-21-SO-10-12	CFTP-21-SO-2-4	CFTP-22-SO-0-0.5	CFTP-22-SO-10-12	CFTP-22-SO-2-4	CFTP-23-SO-0-0.5	CFTP-23-SO-10-12	CFTP-23-SO-2-4	CFTP-DUP24-SO
Parameter	EPA Residential Soil RSL	EPA Industrial Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
Fluoride	310	4700	12	mg/kg	5.55 J+	22.2 J+	1.88 J+	14.6 J+	36.8 J+	2.48 J+	4.27 J+	23.7 J+	2.01 J	40.9 J	33 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

APPENDIX M

Preliminary - Under EPA and MDEQ Review

Calculation of Relative Percent Difference (RPD) in Resampled Operational Area Soil Samples

1. SVOC RPD Calculation
2. Metals RPD Calculation
3. PCB RPD Calculation
4. Pesticides RPD Calculation
5. General Chemistry RPD Calculation
6. SVOC RPD Adjusted Value
7. Metals RPD Adjusted Value
8. PCB RPD Adjusted Value
9. Pesticides RPD Adjusted Value
10. General Chemistry RPD Adjusted Value

Table M1. Semivolitle Organic Compounds RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-002-SO-0.5-2	CFISS-002-SO-0.5-2		CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5		CFISS-006-SO-0.5-2	CFISS-006-SO-0.5-2		CFISS-006-SO-0-0.5	CFISS-006-SO-0-0.5		CFISS-DUP1-SO
Sample Location:		CFISS-002	CFISS-002		CFISS-002	CFISS-002		CFISS-006	CFISS-006		CFISS-006	CFISS-006		CFISS-006
Sample Date:		6/14/2016	7/19/2016		6/14/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016
Sample Depth:		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0 - 0.5
Parameter	Units			RPD Calculation			RPD Calculation			RPD Calculation			RPD Calculation	
1,1'-Biphenyl	mg/kg			--			--			--			--	
1,2,4,5-Tetrachlorobenzene	mg/kg			--			--			--			--	
1,4-Dioxane	mg/kg			--			--			--			--	
2,2'-oxybis[1-chloropropane]	mg/kg			--			--			--			--	
2,3,4,6-Tetrachlorophenol	mg/kg			--			--			--			--	
2,4,5-Trichlorophenol	mg/kg			--			--			--			--	
2,4,6-Trichlorophenol	mg/kg			--			--			--			--	
2,4-Dichlorophenol	mg/kg			--			--			--			--	
2,4-Dimethylphenol	mg/kg			--			--			--			--	
2,4-Dinitrophenol	mg/kg			--			--			--			--	
2,4-Dinitrotoluene	mg/kg			--			--			--			--	
2,6-Dinitrotoluene	mg/kg			--			--			--			--	
2-Chloronaphthalene	mg/kg			--			--			--			--	
2-Chlorophenol	mg/kg			--			--			--			--	
2-Methylnaphthalene	mg/kg			--	0.011	0.011	0.00	0.034	0.067	65.35	0.85	0.018	191.71	0.44
2-Methylphenol	mg/kg			--			--			--			--	
2-Nitroaniline	mg/kg			--			--			--			--	
2-Nitrophenol	mg/kg			--			--			--			--	
3 & 4 Methylphenol	mg/kg			--			--			--			--	
3,3'-Dichlorobenzidine	mg/kg			--			--			--			--	
3-Nitroaniline	mg/kg			--			--			--			--	
4,6-Dinitro-2-methylphenol	mg/kg			--			--			--			--	
4-Bromophenyl phenyl ether	mg/kg			--			--			--			--	
4-Chloro-3-methylphenol	mg/kg			--			--			--			--	
4-Chloroaniline	mg/kg			--			--			--			--	
4-Chlorophenyl phenyl ether	mg/kg			--			--			--			--	
4-Nitroaniline	mg/kg			--			--			--			--	
4-Nitrophenol	mg/kg			--			--			--			--	
Acenaphthene	mg/kg			--	0.045	0.04	11.76	0.26	0.63	83.15	7.4	0.14	192.57	2.9
Acenaphthylene	mg/kg			--			--			--	0.79	0.00495	197.51	
Acetophenone	mg/kg			--			--			--			--	
Anthracene	mg/kg			--	0.083	0.083	0.00	0.65	2	101.89	26	0.53	192.01	7.6
Atrazine	mg/kg			--			--			--			--	
Benzaldehyde	mg/kg			--			--			--			--	
Benzo[a]anthracene	mg/kg	0.057	0.014	121.13	0.41	0.37	10.26	1.8	5.9	106.49	77	1.7	191.36	22
Benzo[a]pyrene	mg/kg	0.064	0.005	171.01	0.45	0.38	16.87	1.9	6.5	109.52	75	2	189.61	23
Benzo[b]fluoranthene	mg/kg	0.14	0.039	112.85	0.8	0.75	6.45	2.4	7.9	106.80	100	2.6	189.86	30
Benzo[g,h,i]perylene	mg/kg	0.057	0.0095	142.86	0.37	0.34	8.45	1.5	6.1	121.05	49	1.8	185.83	19
Benzo[k]fluoranthene	mg/kg	0.052	0.0075	149.58	0.33	0.26	23.73	0.93	2.8	100.27	36	0.85	190.77	13
Bis(2-chloroethoxy)methane	mg/kg			--			--			--			--	
Bis(2-chloroethyl)ether	mg/kg			--			--			--			--	
Bis(2-ethylhexyl) phthalate	mg/kg			--			--			--			--	
Butyl benzyl phthalate	mg/kg			--			--			--			--	
Caprolactam	mg/kg			--			--			--			--	
Carbazole	mg/kg			--	0.075	0.065	14.29	0.44	1	77.78	15	0.31	191.90	4.4
Chrysene	mg/kg	0.1	0.023	125.20	0.68	0.65	4.51	2	6.5	105.88	88	1.9	191.55	25
Dibenz(a,h)anthracene	mg/kg			--	0.08	0.092	13.95	0.35	1.6	128.21	13	0.46	186.33	4.4
Dibenzofuran	mg/kg			--	0.019	0.026	31.11	0.17	0.45	90.32	4.5	0.1	191.30	2.1
Diethyl phthalate	mg/kg			--			--			--			--	
Dimethyl phthalate	mg/kg			--			--			--			--	
Di-n-butyl phthalate	mg/kg			--			--			--			--	
Di-n-octyl phthalate	mg/kg			--			--			--			--	

Preliminary - Under EPA and MDEQ Review

Table M1. Semivolitle Organic Compounds RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-002-SO-0.5-2	CFISS-002-SO-0.5-2		CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5		CFISS-006-SO-0.5-2	CFISS-006-SO-0.5-2		CFISS-006-SO-0-0.5	CFISS-006-SO-0-0.5		CFISS-DUP1-SO
Sample Location:		CFISS-002	CFISS-002		CFISS-002	CFISS-002		CFISS-006	CFISS-006		CFISS-006	CFISS-006		CFISS-006
Sample Date:		6/14/2016	7/19/2016		6/14/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016
Sample Depth:		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0 - 0.5
Parameter	Units			RPD Calculation			RPD Calculation			RPD Calculation			RPD Calculation	
Fluoranthene	mg/kg	0.11	0.021	135.88	0.87	0.86	1.16	4	10	85.71	130	3.6	189.22	40
Fluorene	mg/kg			--	0.028	0.037	27.69	0.28	0.68	83.33	7.9	0.17	191.57	2.9
Hexachlorobenzene	mg/kg			--			--			--			--	
Hexachlorobutadiene	mg/kg			--			--			--			--	
Hexachlorocyclopentadiene	mg/kg			--			--			--			--	
Hexachloroethane	mg/kg			--			--			--			--	
Indeno[1,2,3-cd]pyrene	mg/kg	0.056	0.011	134.33	0.38	0.38	0.00	1.5	6.4	124.05	54	1.9	186.40	20
Isophorone	mg/kg			--	0.004	0.0072	57.14			--			--	
Naphthalene	mg/kg			--	0.025	0.022	12.77	0.17	0.18	5.71	2.5	0.037	194.17	1.7
Nitrobenzene	mg/kg			--			--			--			--	
N-Nitrosodi-n-propylamine	mg/kg			--			--			--			--	
N-Nitrosodiphenylamine	mg/kg			--			--			--			--	
Pentachlorophenol	mg/kg			--			--			--			--	
Phenanthrene	mg/kg	0.056	0.011	134.33	0.48	0.49	2.06	2.8	8.3	99.10	110	2.2	192.16	33
Phenol	mg/kg			--			--			--			--	
Pyrene	mg/kg	0.093	0.017	138.18	0.86	0.7	20.51	2.8	12	124.32	140	3.2	191.06	44

RPD - Relative Percent Difference

Shaded cells indicate non-detect values where half the detection limit was used, if applicible.

-- indicates value where RPD could not be calculated

Preliminary - Under EPA and MDEQ Review

Table M1. Semivolitle Organic Compounds RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-DUP1-SO		CFISS-008-SO-0.5-2	CFISS-008-SO-0.5-2		CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5			
Sample Location:		CFISS-006		CFISS-008	CFISS-008		CFISS-008	CFISS-008			
Sample Date:		7/19/2016		6/18/2016	7/26/2016		6/18/2016	7/26/2016			
Sample Depth:		0 - 0.5		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5			
Parameter	Units		RPD Calculation			RPD Calculation			RPD Calculation	MAX RPD	MAX RPD +10%
1,1'-Biphenyl	mg/kg		--			--			--	--	--
1,2,4,5-Tetrachlorobenzene	mg/kg		--			--			--	--	--
1,4-Dioxane	mg/kg		--			--			--	--	--
2,2'-oxybis[1-chloropropane]	mg/kg		--			--			--	--	--
2,3,4,6-Tetrachlorophenol	mg/kg		--			--			--	--	--
2,4,5-Trichlorophenol	mg/kg		--			--			--	--	--
2,4,6-Trichlorophenol	mg/kg		--			--			--	--	--
2,4-Dichlorophenol	mg/kg		--			--			--	--	--
2,4-Dimethylphenol	mg/kg		--			--			--	--	--
2,4-Dinitrophenol	mg/kg		--			--			--	--	--
2,4-Dinitrotoluene	mg/kg		--			--			--	--	--
2,6-Dinitrotoluene	mg/kg		--			--			--	--	--
2-Chloronaphthalene	mg/kg		--			--			--	--	--
2-Chlorophenol	mg/kg		--			--			--	--	--
2-Methylnaphthalene	mg/kg	0.017	185.12	0.0039	0.0082	71.07	0.015	0.0079	62.01	191.71	201.71
2-Methylphenol	mg/kg		--			--			--	--	--
2-Nitroaniline	mg/kg		--			--			--	--	--
2-Nitrophenol	mg/kg		--			--			--	--	--
3 & 4 Methylphenol	mg/kg		--			--			--	--	--
3,3'-Dichlorobenzidine	mg/kg		--			--			--	--	--
3-Nitroaniline	mg/kg		--			--			--	--	--
4,6-Dinitro-2-methylphenol	mg/kg		--			--			--	--	--
4-Bromophenyl phenyl ether	mg/kg		--			--			--	--	--
4-Chloro-3-methylphenol	mg/kg		--			--			--	--	--
4-Chloroaniline	mg/kg		--			--			--	--	--
4-Chlorophenyl phenyl ether	mg/kg		--			--			--	--	--
4-Nitroaniline	mg/kg		--			--			--	--	--
4-Nitrophenol	mg/kg		--			--			--	--	--
Acenaphthene	mg/kg	0.16	179.08	0.019	0.074	118.28	0.16	0.067	81.94	192.57	202.57
Acenaphthylene	mg/kg		--			--			--	197.51	207.51
Acetophenone	mg/kg		--			--			--	--	--
Anthracene	mg/kg	0.52	174.38	0.017	0.094	138.74	0.22	0.089	84.79	192.01	202.01
Atrazine	mg/kg		--			--			--	--	--
Benzaldehyde	mg/kg		--			--			--	--	--
Benzo[a]anthracene	mg/kg	1.7	171.31	0.11	0.26	81.08	0.79	0.32	84.68	191.36	201.36
Benzo[a]pyrene	mg/kg	2	168.00	0.12	0.3	85.71	0.96	0.38	86.57	189.61	199.61
Benzo[b]fluoranthene	mg/kg	2.5	169.23	0.2	0.41	68.85	1.3	0.53	84.15	189.86	199.86
Benzo[g,h,i]perylene	mg/kg	1.6	168.93	0.097	0.23	81.35	1	0.36	94.12	185.83	195.83
Benzo[k]fluoranthene	mg/kg	0.99	171.69	0.085	0.18	71.70	0.63	0.16	118.99	190.77	200.77
Bis(2-chloroethoxy)methane	mg/kg		--			--			--	--	--
Bis(2-chloroethyl)ether	mg/kg		--			--			--	--	--
Bis(2-ethylhexyl) phthalate	mg/kg		--			--			--	--	--
Butyl benzyl phthalate	mg/kg		--			--			--	--	--
Caprolactam	mg/kg		--			--			--	--	--
Carbazole	mg/kg	0.3	174.47	0.021	0.05	81.69	0.15	0.059	87.08	191.90	201.90
Chrysene	mg/kg	1.9	171.75	0.18	0.36	66.67	1.1	0.42	89.47	191.55	201.55
Dibenz(a,h)anthracene	mg/kg	0.39	167.43	0.024	0.064	90.91	0.0095	0.069	151.59	186.33	196.33
Dibenzofuran	mg/kg	0.11	180.09	0.0055	0.027	132.31	0.046	0.022	70.59	191.30	201.30
Diethyl phthalate	mg/kg		--			--			--	--	--
Dimethyl phthalate	mg/kg		--			--			--	--	--
Di-n-butyl phthalate	mg/kg		--			--	0.059	0.00485	169.62	169.62	179.62
Di-n-octyl phthalate	mg/kg		--			--			--	--	--

Preliminary - Under EPA and MDEQ Review

Table M1. Semivolitle Organic Compounds RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-DUP1-SO		CFISS-008-SO-0.5-2	CFISS-008-SO-0.5-2		CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5			
Sample Location:		CFISS-006		CFISS-008	CFISS-008		CFISS-008	CFISS-008			
Sample Date:		7/19/2016		6/18/2016	7/26/2016		6/18/2016	7/26/2016			
Sample Depth:		0 - 0.5		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5			
Parameter	Units		RPD Calculation			RPD Calculation			RPD Calculation	MAX RPD	MAX RPD +10%
Fluoranthene	mg/kg	3.7	166.13	0.25	0.56	76.54	1.6	0.66	83.19	189.22	199.22
Fluorene	mg/kg	0.17	177.85	0.014	0.054	117.65	0.1	0.048	70.27	191.57	201.57
Hexachlorobenzene	mg/kg		--			--			--	--	--
Hexachlorobutadiene	mg/kg		--			--			--	--	--
Hexachlorocyclopentadiene	mg/kg		--			--			--	--	--
Hexachloroethane	mg/kg		--			--			--	--	--
Indeno[1,2,3-cd]pyrene	mg/kg	1.7	168.66	0.098	0.26	90.50	1	0.41	83.69	186.40	196.40
Isophorone	mg/kg		--			--			--	57.14	67.14
Naphthalene	mg/kg	0.035	191.93	0.0045	0.016	112.20	0.028	0.014	66.67	194.17	204.17
Nitrobenzene	mg/kg		--			--			--	--	--
N-Nitrosodi-n-propylamine	mg/kg		--			--			--	--	--
N-Nitrosodiphenylamine	mg/kg		--			--			--	--	--
Pentachlorophenol	mg/kg		--			--			--	--	--
Phenanthrene	mg/kg	2.3	173.94	0.18	0.49	92.54	1.1	0.47	80.25	192.16	202.16
Phenol	mg/kg		--			--			--	--	--
Pyrene	mg/kg	3.3	172.09	0.25	0.64	87.64	1.8	0.65	93.88	191.06	201.06

RPD - Relative Percent Difference

Shaded cells indicate non-detect values where half the detection limit was used, if applicible.

-- indicates value where RPD could not be calculated

Preliminary - Under EPA and MDEQ Review

Table M2. Metals RPD Calculation

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-002-SO-0.5-2	CFISS-002-SO-0.5-2		CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5		CFISS-006-SO-0.5-2	CFISS-006-SO-0.5-2		CFISS-006-SO-0-0.5	CFISS-006-SO-0-0.5		CFISS-DUP1-SO	CFISS-DUP1-SO
Sample Location:		CFISS-002	CFISS-002		CFISS-002	CFISS-002		CFISS-006	CFISS-006		CFISS-006	CFISS-006		CFISS-006	CFISS-006
Sample Date:		6/14/2016	7/19/2016		6/14/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016	7/19/2016
Sample Depth:		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0 - 0.5	0 - 0.5
Parameter	Units			RPD Calculation			RPD Calculation			RPD Calculation			RPD Calculation		
Aluminum	mg/kg	24500	22000	10.75	44900	37700	17.43	14700	15100	2.68	13600	17300	23.95	14900	17100
Antimony	mg/kg	0.19	0.11	53.33	0.19	0.21	10.00	0.225	1.9	157.65	0.235	0.23	2.15	0.22	0.21
Arsenic	mg/kg	7	6.4	8.96	6.7	4.6	37.17	5.2	4.7	10.10	4.2	4.9	15.38	4.8	5
Barium	mg/kg	182	164	10.40	170	220	25.64	109	162	39.11	105	136	25.73	123	138
Beryllium	mg/kg	0.71	1.1	43.09	3	3.7	20.90	0.48	0.67	33.04	0.48	0.8	50.00	0.52	0.77
Cadmium	mg/kg	0.145	0.08	57.78	0.145	0.25	53.16	0.17	0.11	42.86	0.18	0.22	20.00	0.165	0.26
Calcium	mg/kg	6530	6100	6.81	21300	22000	3.23	5820	10600	58.22	13300	20900	44.44	11600	20300
Chromium	mg/kg	11.6	18.2	44.30	13.3	18.6	33.23	10	17.9	56.63	9.7	16.7	53.03	9.5	17.7
Cobalt	mg/kg	4.8	5.9	20.56	4.1	5.4	27.37	5.1	5.9	14.55	4.8	6.1	23.85	4.9	6.1
Copper	mg/kg	10.8	15	32.56	14	16.9	18.77	23.2	721	187.53	22.8	38.8	51.95	22	42.1
Cyanide, Total	mg/kg	12.3	3.9	103.70	29	18.2	45.76	0.069	0.15	73.97	0.26	0.15	53.66	0.096	0.21
Iron	mg/kg	19400	19500	0.51	15400	15000	2.63	15700	15900	1.27	12100	15000	21.40	11800	15100
Lead	mg/kg	12.2	12.1	0.82	14.2	17.3	19.68	11.3	28.3	85.86	13	406	187.59	17.1	21.7
Magnesium	mg/kg	15300	11800	25.83	11100	10100	9.43	9720	9580	1.45	9940	10000	0.60	8860	9940
Manganese	mg/kg	644	629	2.36	413	502	19.45	381	562	38.39	372	498	28.97	372	537
Mercury	mg/kg	0.023	0.026	12.24	0.0065	0.019	98.04	0.015	0.025	50.00	0.021	0.038	57.63	0.017	0.033
Nickel	mg/kg	12.2	15.8	25.71	25.8	44.5	53.20	13.8	15.1	9.00	19.9	30.9	43.31	21.5	31.2
Potassium	mg/kg	1720	1440	17.72	2430	3080	23.59	899	1050	15.50	1000	1400	33.33	1130	1390
Selenium	mg/kg	0.175	0.85	131.71	0.175	0.74	123.50	0.21	0.82	118.45	0.22	0.75	109.28	0.205	0.78
Silver	mg/kg	0.345	0.035	163.16	0.345	0.056	144.14	0.41	0.086	130.65	0.43	0.089	131.41	0.41	0.092
Sodium	mg/kg	1550	2090	29.67	10500	9000	15.38	41.9	74.4	55.89	69.3	120	53.57	76.8	118
Thallium	mg/kg	0.15	0.13	14.29	0.15	0.17	12.50	0.085	0.11	25.64	0.09	0.12	28.57	0.085	0.12
Vanadium	mg/kg	17.6	21.5	19.95	24.3	35.8	38.27	12.3	12.5	1.61	11.3	17.4	42.51	12.5	17.7
Zinc	mg/kg	56.1	56.6	0.89	46.4	59.2	24.24	51.6	214	122.29	44.1	66.1	39.93	51.6	65

RPD - Relative Percent Difference

Shaded cells indicate non-detect values where half the detection limit was used, if applicible.

-- indicates value where RPD could not be calculated

Preliminary - Under EPA and MDEQ Review

Table M2. Metals RPD Calculation

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-008-SO-0.5-2	CFISS-008-SO-0.5-2		CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5			
Sample Location:			CFISS-008	CFISS-008		CFISS-008	CFISS-008			
Sample Date:			6/18/2016	7/26/2016		6/18/2016	7/26/2016			
Sample Depth:			0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5			
Parameter	Units	RPD Calculation			RPD Calculation			RPD Calculation	MAX RPD	MAX RPD +10%
Aluminum	mg/kg	13.75	15000	19000	23.53	22700	32700	36.10	36.10	46.10
Antimony	mg/kg	4.65	0.2	0.14	35.29	0.195	0.24	20.69	157.65	167.65
Arsenic	mg/kg	4.08	5.5	5.8	5.31	5.2	6	14.29	37.17	47.17
Barium	mg/kg	11.49	107	118	9.78	102	120	16.22	39.11	49.11
Beryllium	mg/kg	38.76	0.67	0.8	17.69	0.8	0.92	13.95	50.00	60.00
Cadmium	mg/kg	44.71	0.15	0.13	14.29	0.15	0.27	57.14	57.78	67.78
Calcium	mg/kg	54.55	25000	22600	10.08	18400	21400	15.08	58.22	68.22
Chromium	mg/kg	60.29	10.9	20	58.90	80.3	25.2	104.45	104.45	114.45
Cobalt	mg/kg	21.82	5.8	6.2	6.67	6.7	6.2	7.75	27.37	37.37
Copper	mg/kg	62.71	14.1	17.1	19.23	18.8	21.1	11.53	187.53	197.53
Cyanide, Total	mg/kg	74.51	2	1.6	22.22	0.66	0.97	38.04	103.70	113.70
Iron	mg/kg	24.54	15200	16600	8.81	16300	16500	1.22	24.54	34.54
Lead	mg/kg	23.71	10.3	13.5	26.89	13.9	16.9	19.48	187.59	197.59
Magnesium	mg/kg	11.49	12500	12700	1.59	12000	11100	7.79	25.83	35.83
Manganese	mg/kg	36.30	404	501	21.44	397	448	12.07	38.39	48.39
Mercury	mg/kg	64.00	0.049	0.023	72.22	0.02	0.016	22.22	98.04	108.04
Nickel	mg/kg	36.81	13.5	21.5	45.71	96.2	39.9	82.73	82.73	92.73
Potassium	mg/kg	20.63	1190	1530	25.00	1490	2040	31.16	33.33	43.33
Selenium	mg/kg	116.75	0.185	1.6	158.54	0.185	1.5	156.08	158.54	168.54
Silver	mg/kg	126.69	0.365	0.042	158.72	0.355	0.052	148.89	163.16	173.16
Sodium	mg/kg	42.30	1460	1550	5.98	1600	3780	81.04	81.04	91.04
Thallium	mg/kg	34.15	0.075	0.091	19.28	0.075	0.11	37.84	37.84	47.84
Vanadium	mg/kg	34.44	10.4	14.4	32.26	16.1	18.9	16.00	42.51	52.51
Zinc	mg/kg	22.98	39.8	51.7	26.01	51.5	56.6	9.44	122.29	132.29

RPD - Relative Percent Difference

Shaded cells indicate non-detect values where half the detection limit was used, if applicible.

-- indicates value where RPD could not be calculated

Preliminary - Under EPA QA/QC Review

Table M3. Polychlorinated Biphenyl RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-002-SO-0.5-2	CFISS-002-SO-0.5-2	CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5	CFISS-006-SO-0.5-2	CFISS-006-SO-0.5-2	CFISS-006-SO-0-0.5	CFISS-006-SO-0-0.5	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-008-SO-0.5-2	CFISS-008-SO-0.5-2
Sample Location:		CFISS-002	CFISS-002	CFISS-002	CFISS-002	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-008	CFISS-008
Sample Date:		6/14/2016	7/19/2016	6/14/2016	7/19/2016	6/17/2016	7/19/2016	6/17/2016	7/19/2016	6/17/2016	7/19/2016	6/18/2016	7/26/2016
Sample Depth:		0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2
Parameter	Units												
Aroclor 1016	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1221	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1232	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1242	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1248	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1254	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1260	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor 1268	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Aroclor-1262	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U
Polychlorinated biphenyls, Total	mg/kg	0.075 U	0.068 U	0.076 U	0.065 U	0.078 U	0.068 U	0.078 U	0.067 U	0.077 U	0.068 U	0.072 U	0.067 U

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
-- indicates value where RPD could not be calculated

Preliminary - Under EPA and MDEQ Review

Table M3. Polychlorinated Biphenyl RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5		
Sample Location:		CFISS-008	CFISS-008		
Sample Date:		6/18/2016	7/26/2016		
Sample Depth:		0 - 0.5	0 - 0.5		
Parameter	Units			MAX RPD	MAX RPD +10%
Aroclor 1016	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1221	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1232	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1242	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1248	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1254	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1260	mg/kg	0.074 U	0.068 U	--	--
Aroclor 1268	mg/kg	0.074 U	0.068 U	--	--
Aroclor-1262	mg/kg	0.074 U	0.068 U	--	--
Polychlorinated biphenyls, Total	mg/kg	0.074 U	0.068 U	--	--

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
-- indicates value where RPD could not be calculated

Preliminary - Under EPA and MDEQ Review

Table M4. Organochlorine Pesticides RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5	CFISS-006-SO-0-0.5	CFISS-006-SO-0-0.5	CFISS-DUP1-SO	CFISS-DUP1-SO	CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5		
Sample Location:		CFISS-002	CFISS-002	CFISS-006	CFISS-006	CFISS-006	CFISS-006	CFISS-008	CFISS-008		
Sample Date:		6/14/2016	7/19/2016	6/17/2016	7/19/2016	6/17/2016	7/19/2016	6/18/2016	7/26/2016		
Sample Depth:		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5		
Parameter	Units									MAX RPD	MAX RPD +10%
4,4'-DDD	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
4,4'-DDE	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
4,4'-DDT	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Aldrin	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
alpha-BHC	mg/kg	0.0023 U	0.0019 U	0.0023 U	0.002 U	0.0023 U	0.002 U	0.0022 U	0.002 U	--	--
alpha-Chlordane	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
beta-BHC	mg/kg	0.0023 U	0.0019 U	0.0023 U	0.002 U	0.0023 U	0.002 U	0.0022 U	0.002 U	--	--
delta-BHC	mg/kg	0.0023 U	0.0019 U	0.0023 U	0.002 U	0.0023 U	0.002 U	0.0022 U	0.002 U	--	--
Dieldrin	mg/kg	0.0023 U	0.0019 U	0.0023 U	0.002 U	0.0023 U	0.002 U	0.0022 U	0.002 U	--	--
Endosulfan I	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Endosulfan II	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Endosulfan sulfate	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Endrin	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Endrin aldehyde	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Endrin ketone	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
gamma-BHC (Lindane)	mg/kg	0.0023 U	0.0019 U	0.0023 U	0.002 U	0.0023 U	0.002 U	0.0022 U	0.002 U	--	--
gamma-Chlordane	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Heptachlor	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Heptachlor epoxide	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Methoxychlor	mg/kg	0.0076 U	0.0065 U	0.0078 U	0.0067 U	0.0077 U	0.0068 U	0.0074 U	0.0068 U	--	--
Toxaphene	mg/kg	0.076 U	0.065 U	0.078 U	0.067 U	0.077 U	0.068 U	0.074 U	0.068 U	--	--

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
-- indicates value where RPD
could not be calculated

Preliminary - Under EPA and ODEQ Review

Table M5. General Chemistry RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:		CFISS-002-SO-0.5-2	CFISS-002-SO-0.5-2		CFISS-002-SO-0-0.5	CFISS-002-SO-0-0.5		CFISS-006-SO-0.5-2	CFISS-006-SO-0.5-2		CFISS-006-SO-0-0.5	CFISS-006-SO-0-0.5		CFISS-DUP1-SO	CFISS-DUP1-SO
Sample Location:		CFISS-002	CFISS-002		CFISS-002	CFISS-002		CFISS-006	CFISS-006		CFISS-006	CFISS-006		CFISS-006	CFISS-006
Sample Date:		6/14/2016	7/19/2016		6/14/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016	7/19/2016		6/17/2016	7/19/2016
Sample Depth:		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5		0 - 0.5	0 - 0.5
Parameter	Units			RPD Calculation			RPD Calculation			RPD Calculation			RPD Calculation		
Fluoride	mg/kg	53.3	647	169.56	18.6	976	192.52	76	85.4	11.65	59	70.2	17.34	78.1	73.2

RPD - Relative Percent Difference

Preliminary - Under EPA and MDEQ Review

Table M5. General Chemistry RPD Calculation
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-008-SO-0.5-2	CFISS-008-SO-0.5-2		CFISS-008-SO-0-0.5	CFISS-008-SO-0-0.5			
Sample Location:			CFISS-008	CFISS-008		CFISS-008	CFISS-008			
Sample Date:			6/18/2016	7/26/2016		6/18/2016	7/26/2016			
Sample Depth:			0.5 - 2	0.5 - 2		0 - 0.5	0 - 0.5			
Parameter	Units	RPD Calculation			RPD Calculation			RPD Calculation	MAX RPD	MAX RPD +10%
Fluoride	mg/kg	6.48	320	508	45.41	328	662	67.47	192.52	202.52

RPD - Relative Percent Difference

Preliminary - Under EPA and MDEQ Review

Table M6. Semivolitle Organic Compounds RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:				CFISS-001-SO-0.5-2		CFISS-001-SO-0-0.5		CFISS-003-SO-0.5-2		CFISS-003-SO-0-0.5		CFISS-004-SO-0.5-2		CFISS-004-SO-0-0.5		CFISS-005-SO-0.5-2	
Sample Location:				CFISS-001		CFISS-001		CFISS-003		CFISS-003		CFISS-004		CFISS-004		CFISS-005	
Sample Date:				6/14/2016		6/14/2016		6/15/2016		6/15/2016		6/15/2016		6/15/2016		6/16/2016	
Sample Depth:				0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2	
Resample				Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
2-Methylnaphthalene	0.019	mg/kg	201.71					**0.04**	**0.12**	**0.066**	**0.20**			**0.073**	**0.22**	**0.076**	**0.23**
Acenaphthene	0.25	mg/kg	202.57			0.051	0.15	0.077	0.23	**0.25**	**0.76**	0.027	0.08	**0.45**	**1.36**	**0.34**	**1.03**
Acenaphthylene	120	mg/kg	207.51														
Anthracene	5.8	mg/kg	202.01			0.09	0.27	0.11	0.33	0.36	1.09	0.044	0.13	1.1	3.32	0.58	1.75
Benzo[a]anthracene	0.2	mg/kg	201.36			**0.41**	**1.24**	**0.32**	**0.96**	**1.2**	**3.62**	0.16	**0.48**	**2.8**	**8.44**	**1.4**	**4.22**
Benzo[a]pyrene	0.004	mg/kg	199.61			**0.44**	**1.32**	**0.37**	**1.11**	**1.4**	**4.19**	**0.18**	**0.54**	**2.6**	**7.79**	**1.6**	**4.79**
Benzo[b]fluoranthene	0.041	mg/kg	199.86	0.019	**0.06**	**0.8**	**2.40**	**0.53**	**1.59**	**2.3**	**6.90**	**0.27**	**0.81**	**3.4**	**10.20**	**2.2**	**6.60**
Benzo[g,h,i]perylene	24	mg/kg	195.83			0.43	1.27	0.37	1.09	1.4	4.14	0.16	0.47	1.8	5.32	1.2	3.55
Benzo[k]fluoranthene	0.4	mg/kg	200.77			0.28	**0.84**	0.22	**0.66**	**0.92**	**2.77**	0.082	0.25	**1.6**	**4.81**	**0.82**	**2.47**
Carbazole	80	mg/kg	201.90			0.072	0.22	0.063	0.19	0.23	0.69	0.029	0.09	0.8	2.42	0.33	1.00
Chrysene	1.2	mg/kg	201.55	0.013	0.04	0.61	**1.84**	0.42	**1.27**	**1.9**	**5.73**	0.2	0.60	**3.1**	**9.35**	**1.8**	**5.43**
Dibenz(a,h)anthracene	0.013	mg/kg	196.33			**0.13**	**0.39**	**0.098**	**0.29**	**0.4**	**1.19**	**0.043**	**0.13**	**0.59**	**1.75**	**0.34**	**1.01**
Dibenzofuran	0.015	mg/kg	201.30			**0.022**	**0.07**	**0.036**	**0.11**	**0.13**	**0.39**	0.012	**0.04**	**0.19**	**0.57**	**0.21**	**0.63**
Di-n-butyl phthalate	0.011	mg/kg	179.62														
Fluoranthene	8.9	mg/kg	199.22	0.014	0.04	0.87	2.60	0.63	1.89	2.6	7.78	0.33	0.99	6.8	**20.35**	3	**8.98**
Fluorene	0.54	mg/kg	201.57			0.031	0.09	0.067	0.20	0.21	**0.63**	0.022	0.07	0.39	**1.18**	0.31	**0.93**
Indeno[1,2,3-cd]pyrene	0.13	mg/kg	196.40			**0.44**	**1.30**	**0.34**	**1.01**	**1.4**	**4.15**	**0.17**	**0.50**	**2.1**	**6.22**	**1.3**	**3.85**
Isophorone	0.026	mg/kg	67.14														
Naphthalene	0.00054	mg/kg	204.17					**0.064**	**0.19**	**0.16**	**0.49**			**0.12**	**0.36**	**0.16**	**0.49**
Phenanthrene	5.5	mg/kg	202.16			0.47	1.42	0.42	1.27	1.6	4.83	0.2	0.60	4.3	**12.99**	2	**6.04**
Pyrene	1.3	mg/kg	201.06			0.79	**2.38**	0.5	**1.51**	**1.8**	**5.42**	0.25	0.75	**4.3**	**12.95**	**1.9**	**5.72**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level
Highlighted cells indicate values that exceed the EPA Minimum Screening Levels following the RPD adjustment

Preliminary - Under EPA and MDEQ Review

Table M6. Semivolitle Organic Compounds RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-005-SO-0-0.5		CFISS-007-SO-0.5-2		CFISS-007-SO-0-0.5		CFISS-009-SO-0.5-2		CFISS-009-SO-0-0.5		CFISS-010-SO-0.5-2		CFISS-010-SO-0-0.5	
Sample Location:			CFISS-005		CFISS-007		CFISS-007		CFISS-009		CFISS-009		CFISS-010		CFISS-010	
Sample Date:			6/16/2016		6/17/2016		6/17/2016		6/22/2016		6/22/2016		6/22/2016		6/22/2016	
Sample Depth:			0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5	
Resample			Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Parameter	EPA Minimum Screening Levels	Units		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
2-Methylnaphthalene	0.019	mg/kg	**0.022**	**0.07**	**0.22**	**0.66**	**0.066**	**0.20**							0.012	**0.04**
Acenaphthene	0.25	mg/kg	0.13	**0.39**	**0.5**	**1.51**	0.21	**0.64**			0.036	0.11			0.055	0.17
Acenaphthylene	120	mg/kg			0.029	0.09										
Anthracene	5.8	mg/kg	0.2	0.60	0.93	2.81	0.4	1.21			0.075	0.23			0.12	0.36
Benzo[a]anthracene	0.2	mg/kg	**0.7**	**2.11**	**2.8**	**8.44**	**1.9**	**5.73**	0.047	0.14	**0.68**	**2.05**	0.089	**0.27**	**0.66**	**1.99**
Benzo[a]pyrene	0.004	mg/kg	**0.82**	**2.46**	**2.6**	**7.79**	**2.2**	**6.59**	**0.045**	**0.13**	**0.67**	**2.01**	**0.091**	**0.27**	**0.75**	**2.25**
Benzo[b]fluoranthene	0.041	mg/kg	**1.4**	**4.20**	**3.1**	**9.30**	**3.1**	**9.30**	**0.068**	**0.20**	**1.4**	**4.20**	**0.14**	**0.42**	**1.3**	**3.90**
Benzo[g,h,i]perylene	24	mg/kg	0.83	2.46	1.8	5.32	2.2	6.51	0.051	0.15	0.6	1.77	0.058	0.17	0.87	2.57
Benzo[k]fluoranthene	0.4	mg/kg	**0.45**	**1.35**	**1.3**	**3.91**	**1.3**	**3.91**	0.031	0.09	**0.55**	**1.65**	0.063	0.19	**0.44**	**1.32**
Carbazole	80	mg/kg	0.13	0.39	0.58	1.75	0.3	0.91			0.15	0.45	0.012	0.04	0.13	0.39
Chrysene	1.2	mg/kg	1.1	**3.32**	**2.9**	**8.74**	**2.6**	**7.84**	0.054	0.16	1.1	**3.32**	0.1	0.30	0.91	**2.74**
Dibenz(a,h)anthracene	0.013	mg/kg	**0.21**	**0.62**	**0.5**	**1.48**	**0.59**	**1.75**			**0.17**	**0.50**			**0.24**	**0.71**
Dibenzofuran	0.015	mg/kg	**0.062**	**0.19**	**0.17**	**0.51**	**0.11**	**0.33**			0.013	**0.04**			**0.023**	**0.07**
Di-n-butyl phthalate	0.011	mg/kg			**0.055**	**0.15**	**0.07**	**0.20**					**0.042**	**0.12**		
Fluoranthene	8.9	mg/kg	1.4	4.19	5.5	**16.46**	3.6	**10.77**	0.088	0.26	1.2	3.59	0.15	0.45	1.3	3.89
Fluorene	0.54	mg/kg	0.1	0.30	0.4	**1.21**	0.15	0.45							0.04	0.12
Indeno[1,2,3-cd]pyrene	0.13	mg/kg	**0.89**	**2.64**	**2.1**	**6.22**	**2.3**	**6.82**	0.048	**0.14**	**0.61**	**1.81**	0.066	**0.20**	**0.88**	**2.61**
Isophorone	0.026	mg/kg														
Naphthalene	0.00054	mg/kg	**0.047**	**0.14**	**0.19**	**0.58**	**0.096**	**0.29**							**0.031**	**0.09**
Phenanthrene	5.5	mg/kg	0.82	2.48	3.8	**11.48**	2.1	**6.35**	0.057	0.17	0.42	1.27	0.091	0.27	0.62	1.87
Pyrene	1.3	mg/kg	1.1	**3.31**	**4.5**	**13.55**	**3.1**	**9.33**	0.061	0.18	0.92	**2.77**	0.15	0.45	0.95	**2.86**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level
Highlighted cells indicate values that exceed the EPA Minimum Screening Levels following the RPD adjustment

Preliminary - Under EPA and MDEQ Review

Table M6. Semivolitle Organic Compounds RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-011-SO-0.5-2		CFISS-011-SO-0-0.5		CFISS-012-SO-0.5-2		CFISS-012-SO-0-0.5		CFISS-013-SO-0.5-2		CFISS-013-SO-0-0.5		CFISS-014-SO-0.5-2	
Sample Location:			CFISS-011		CFISS-011		CFISS-012		CFISS-012		CFISS-013		CFISS-013		CFISS-014	
Sample Date:			6/21/2016		6/21/2016		6/21/2016		6/21/2016		6/20/2016		6/20/2016		6/20/2016	
Sample Depth:			0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2	
Resample			Yes		Yes		No		Yes		Yes		Yes		Yes	
Parameter	EPA Minimum Screening Levels	Units		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
2-Methylnaphthalene	0.019	mg/kg	0.018	**0.05**	**0.06**	**0.18**	**2.7**	**8.15**	**0.12**	**0.36**	**0.7**	**2.11**	**3.7**	**11.16**	0.0083	**0.03**
Acenaphthene	0.25	mg/kg	0.057	0.17	0.17	**0.51**	**25**	**75.64**	**0.51**	**1.54**	**3.9**	**11.80**	**7.1**	**21.48**	0.047	0.14
Acenaphthylene	120	mg/kg							0.013	0.04						
Anthracene	5.8	mg/kg	0.097	0.29	0.29	0.88	**34**	**102.68**	1	3.02	**8.7**	**26.27**	**14**	**42.28**	0.1	0.30
Benzo[a]anthracene	0.2	mg/kg	**0.25**	**0.75**	**1.2**	**3.62**	**48**	**144.65**	**3.9**	**11.75**	**19**	**57.26**	**34**	**102.46**	**0.38**	**1.15**
Benzo[a]pyrene	0.004	mg/kg	**0.27**	**0.81**	**1.3**	**3.89**	**46**	**137.82**	**4.3**	**12.88**	**16**	**47.94**	**30**	**89.88**	**0.34**	**1.02**
Benzo[b]fluoranthene	0.041	mg/kg	**0.37**	**1.11**	**1.8**	**5.40**	**56**	**167.92**	**5.7**	**17.09**	**24**	**71.97**	**39**	**116.95**	**0.87**	**2.61**
Benzo[g,h,i]perylene	24	mg/kg	0.24	0.71	1.8	5.32	**29**	**85.79**	5.4	15.97	12	**35.50**	21	**62.12**	0.38	1.12
Benzo[k]fluoranthene	0.4	mg/kg	0.15	**0.45**	**0.67**	**2.02**	**20**	**60.15**	**2**	**6.02**	**8.7**	**26.17**	**18**	**54.14**	0.26	**0.78**
Carbazole	80	mg/kg	0.055	0.17	0.23	0.69	21	63.40	0.62	1.87	5.2	15.70	8.9	26.87	0.04	0.12
Chrysene	1.2	mg/kg	0.27	0.81	**1.5**	**4.52**	**51**	**153.79**	**4.5**	**13.57**	**20**	**60.31**	**36**	**108.56**	0.57	**1.72**
Dibenz(a,h)anthracene	0.013	mg/kg	**0.078**	**0.23**	**0.48**	**1.42**	**7.9**	**23.41**	**1.4**	**4.15**	**3.6**	**10.67**	**6.3**	**18.67**	**0.12**	**0.36**
Dibenzofuran	0.015	mg/kg	**0.036**	**0.11**	**0.086**	**0.26**	**9.2**	**27.72**	**0.26**	**0.78**	**2.1**	**6.33**	**3.9**	**11.75**	**0.025**	**0.08**
Di-n-butyl phthalate	0.011	mg/kg	**0.042**	**0.12**	**0.043**	**0.12**			**0.095**	**0.27**					**0.039**	**0.11**
Fluoranthene	8.9	mg/kg	0.4	1.20	1.9	5.69	**110**	**329.14**	6.4	**19.15**	**39**	**116.70**	**70**	**209.46**	0.62	1.86
Fluorene	0.54	mg/kg	0.049	0.15	0.13	0.39	**20**	**60.31**			**3.3**	**9.95**	**5.8**	**17.49**	0.054	0.16
Indeno[1,2,3-cd]pyrene	0.13	mg/kg	**0.26**	**0.77**	**1.6**	**4.74**	**32**	**94.85**	**5.3**	**15.71**	**13**	**38.53**	**24**	**71.14**	**0.37**	**1.10**
Isophorone	0.026	mg/kg					**1.5**	**2.51**			**0.45**	**0.75**	**0.38**	**0.64**		
Naphthalene	0.00054	mg/kg	**0.038**	**0.12**	**0.075**	**0.23**	**5.6**	**17.03**	**0.21**	**0.64**	**0.92**	**2.80**	**3**	**9.12**	**0.015**	**0.05**
Phenanthrene	5.5	mg/kg	0.38	1.15	1.5	4.53	**120**	**362.59**	4.5	**13.60**	**36**	**108.78**	**63**	**190.36**	0.4	1.21
Pyrene	1.3	mg/kg	0.39	1.17	**2**	**6.02**	**88**	**264.93**	**6.6**	**19.87**	**37**	**111.39**	**65**	**195.69**	0.71	**2.14**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level
Highlighted cells indicate values that exceed the EPA Minimum Screening Levels following the RPD adjustment

Preliminary - Under EPA and MDEQ Review

Table M6. Semivolitle Organic Compounds RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-014-SO-0-0.5		CFISS-015-SO-0.5-2		CFISS-015-SO-0-0.5	
Sample Location:			CFISS-014		CFISS-015		CFISS-015	
Sample Date:			6/20/2016		6/18/2016		6/18/2016	
Sample Depth:			0 - 0.5		0.5 - 2		0 - 0.5	
Resample			Yes		Yes		Yes	
Parameter	EPA Minimum Screening Levels	Units		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
2-Methylnaphthalene	0.019	mg/kg	0.015	**0.05**	0.014	**0.04**	0.0082	**0.02**
Acenaphthene	0.25	mg/kg	0.085	**0.26**			0.036	0.11
Acenaphthylene	120	mg/kg						
Anthracene	5.8	mg/kg	0.2	0.60				
Benzo[a]anthracene	0.2	mg/kg	**1.1**	**3.31**	0.096	**0.29**	**1.2**	**3.62**
Benzo[a]pyrene	0.004	mg/kg	**1.2**	**3.60**	**0.11**	**0.33**	**0.62**	**1.86**
Benzo[b]fluoranthene	0.041	mg/kg	**3.2**	**9.60**	**0.26**	**0.78**	**6.1**	**18.29**
Benzo[g,h,i]perylene	24	mg/kg	1.7	5.03	0.11	0.33	1.2	3.55
Benzo[k]fluoranthene	0.4	mg/kg	**0.9**	**2.71**	0.089	0.27	**1.2**	**3.61**
Carbazole	80	mg/kg	0.18	0.54			0.08	0.24
Chrysene	1.2	mg/kg	**2.3**	**6.94**	0.18	0.54	**6.2**	**18.70**
Dibenz(a,h)anthracene	0.013	mg/kg	**0.49**	**1.45**	**0.03**	**0.09**	**0.56**	**1.66**
Dibenzofuran	0.015	mg/kg	**0.034**	**0.10**			**0.016**	**0.05**
Di-n-butyl phthalate	0.011	mg/kg	**0.019**	**0.05**	**0.048**	**0.13**	**0.04**	**0.11**
Fluoranthene	8.9	mg/kg	2.2	6.58	0.17	0.51	2.3	6.88
Fluorene	0.54	mg/kg	0.063	0.19			0.021	0.06
Indeno[1,2,3-cd]pyrene	0.13	mg/kg	**1.6**	**4.74**	0.12	**0.36**	**1.4**	**4.15**
Isophorone	0.026	mg/kg						
Naphthalene	0.00054	mg/kg	**0.024**	**0.07**	**0.016**	**0.05**	**0.02**	**0.06**
Phenanthrene	5.5	mg/kg	1.2	3.63	0.1	0.30	0.65	1.96
Pyrene	1.3	mg/kg	**2.3**	**6.92**	0.18	0.54	**2.1**	**6.32**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level
Highlighted cells indicate values that exceed the EPA Minimum Screening Levels following the RPD adjustment

Preliminary - Under EPA and MDEQ Review

Table M7. Metals RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

		Sample Designation:		CFISS-001-SO-0.5-2		CFISS-001-SO-0-0.5		CFISS-003-SO-0.5-2		CFISS-003-SO-0-0.5		CFISS-004-SO-0.5-2		CFISS-004-SO-0-0.5		CFISS-004-SO-0-0.5-Pb	
		Sample Location:		CFISS-001		CFISS-001		CFISS-003		CFISS-003		CFISS-004		CFISS-004		CFISS-004	
		Sample Date:		6/14/2016		6/14/2016		6/15/2016		6/15/2016		6/15/2016		6/15/2016		6/15/2016	
		Sample Depth:		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0 - 0.5	
		Resample		Yes		No		No		No		No		Yes		No	
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%	RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value	
Aluminum	50	mg/kg	46.10	**11900**	**17386.03**	**26100**	**38132.38**	**16600**	**24252.78**	**28000**	**40908.30**	**19100**	**27905.31**	**20500**	**29950.72**		
Antimony	0.035	mg/kg	167.65														
Arsenic	0.0015	mg/kg	47.17	**3.4**	**5.00**	**8.4**	**12.36**	**6.2**	**9.12**	**6**	**8.83**	**8.6**	**12.66**	**7.3**	**10.74**		
Barium	1.04	mg/kg	49.11	**66.8**	**99.61**	**199**	**296.74**	**184**	**274.37**	**201**	**299.72**	**126**	**187.88**	**181**	**269.90**		
Beryllium	1.06	mg/kg	60.00	0.44	0.70	**1.1**	**1.76**	0.53	0.85	**1.8**	**2.88**	0.58	0.93	0.74	**1.18**		
Cadmium	0.00222	mg/kg	67.78														
Chromium	0.4	mg/kg	114.45	**7.5**	**16.08**	**12**	**25.73**	**14**	**30.02**	**14.7**	**31.52**	**11.1**	**23.80**	**10.6**	**22.73**		
Cobalt	0.027	mg/kg	37.37	**4.8**	**6.59**	**5**	**6.87**	**6.1**	**8.38**	**5.2**	**7.14**	**7**	**9.62**	**6.3**	**8.65**		
Copper	2.8	mg/kg	197.53	**11**	**32.73**	**10.4**	**30.94**	**12.3**	**36.60**	**12**	**35.70**	**13.1**	**38.98**	**11.3**	**33.62**		
Cyanide, Total	0.0015	mg/kg	113.70	**6.3**	**13.46**	**8.5**	**18.16**	**2**	**4.27**	**19.8**	**42.31**	**0.21**	**0.45**	**0.67**	**1.43**		
Iron	35	mg/kg	34.54	**10300**	**13857.14**	**20800**	**27983.35**	**16800**	**22601.93**	**16100**	**21660.19**	**18200**	**24485.43**	**17700**	**23812.75**		
Lead	0.0537	mg/kg	197.59	**5.8**	**17.26**	**15.8**	**47.02**	**10.9**	**32.44**	**12.1**	**36.01**	**14.3**	**42.56**	**15.9**	**47.32**	**20.1**	**59.82**
Manganese	2.8	mg/kg	48.39	**226**	**335.36**	**597**	**885.88**	**598**	**887.36**	**544**	**807.23**	**674**	**1000.14**	**682**	**1012.01**		
Mercury	0.0033	mg/kg	108.04	**0.021**	**0.04**			**0.016**	**0.03**			**0.027**	**0.06**				
Nickel	9.7	mg/kg	92.73	8.3	**16.00**	**18.5**	**35.66**	**12.5**	**24.09**	**24.8**	**47.80**	**12.7**	**24.48**	**13.9**	**26.79**		
Selenium	0.0276	mg/kg	168.54									**0.35**	**0.94**				
Silver	0.08	mg/kg	173.16														
Thallium	0.05	mg/kg	47.84														
Vanadium	0.714	mg/kg	52.51	**8**	**12.20**	**19.8**	**30.20**	**13.1**	**19.98**	**25.6**	**39.04**	**13.5**	**20.59**	**19**	**28.98**		
Zinc	6.62	mg/kg	132.29	**29.3**	**68.06**	**47.4**	**110.11**	**45.9**	**106.62**	**56.3**	**130.78**	**48.6**	**112.89**	**51.8**	**120.33**		

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum
Highlighted cells indicate values that exceed the EPA
Minimum Screening Levels following the RPD
adjustment triggering the need to resample

Preliminary - Under EPA and MDEQ Review

Table M7. Metals RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

		Sample Designation:	CFISS-005-SO-0.5-2		CFISS-005-SO-0-0.5		CFISS-007-SO-0.5-2		CFISS-007-SO-0-0.5		CFISS-009-SO-0.5-2		CFISS-009-SO-0-0.5		CFISS-010-SO-0.5-2	
		Sample Location:	CFISS-005		CFISS-005		CFISS-007		CFISS-007		CFISS-009		CFISS-009		CFISS-010	
		Sample Date:	6/16/2016		6/16/2016		6/17/2016		6/17/2016		6/22/2016		6/22/2016		6/22/2016	
		Sample Depth:	0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2	
		Resample	No		No		No		Yes		No		No		No	
Parameter	EPA Minimum Screening Levels	Units	RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value	
Aluminum	50	mg/kg	**17300**	**25275.49**	**15300**	**22353.47**	**14200**	**20746.35**	**20000**	**29220.22**	**15600**	**22791.77**	**14800**	**21622.96**	**15200**	**22207.36**
Antimony	0.035	mg/kg														
Arsenic	0.0015	mg/kg	**6.7**	**9.86**	**4.9**	**7.21**	**7.5**	**11.04**	**4.4**	**6.48**	**7.2**	**10.60**	**5.8**	**8.54**	**5.7**	**8.39**
Barium	1.04	mg/kg	**114**	**169.99**	**122**	**181.92**	**115**	**171.48**	**91.5**	**136.44**	**100**	**149.11**	**118**	**175.95**	**107**	**159.55**
Beryllium	1.06	mg/kg	0.53	0.85	0.51	0.82	0.57	0.91	0.83	**1.33**	0.53	0.85	0.53	0.85	0.49	0.78
Cadmium	0.00222	mg/kg														
Chromium	0.4	mg/kg	**11.8**	**25.31**	**10.7**	**22.95**	**11.8**	**25.31**	**29**	**62.19**	**11.7**	**25.09**	**11.2**	**24.02**	**10.8**	**23.16**
Cobalt	0.027	mg/kg	**5.7**	**7.83**	**5.8**	**7.97**	**6.2**	**8.52**	**5.5**	**7.56**	**5.7**	**7.83**	**5.9**	**8.10**	**5.4**	**7.42**
Copper	2.8	mg/kg	**15.2**	**45.22**	**28**	**83.31**	**17.6**	**52.37**	**46.2**	**137.46**	**13.3**	**39.57**	**13.7**	**40.76**	**14.4**	**42.84**
Cyanide, Total	0.0015	mg/kg	**0.21**	**0.45**	**0.24**	**0.51**	**0.11**	**0.24**	**0.29**	**0.62**	**0.022**	**0.05**	**0.07**	**0.15**	**0.043**	**0.09**
Iron	35	mg/kg	**18000**	**24216.36**	**15000**	**20180.30**	**16100**	**21660.19**	**18300**	**24619.96**	**19100**	**25696.25**	**16500**	**22198.33**	**16800**	**22601.93**
Lead	0.0537	mg/kg	**12.1**	**36.01**	**15.3**	**45.53**	**16.8**	**50.00**	**15.1**	**44.94**	**12.6**	**37.50**	**12**	**35.71**	**11.4**	**33.93**
Manganese	2.8	mg/kg	**465**	**690.00**	**460**	**682.59**	**467**	**692.97**	**406**	**602.46**	**494**	**733.04**	**525**	**779.04**	**417**	**618.78**
Mercury	0.0033	mg/kg	**0.017**	**0.04**	**0.016**	**0.03**	**0.023**	**0.05**	**0.02**	**0.04**	**0.027**	**0.06**	**0.017**	**0.04**	**0.02**	**0.04**
Nickel	9.7	mg/kg	**12.8**	**24.67**	**16.8**	**32.38**	**12.5**	**24.09**	**24.6**	**47.41**	**13**	**25.06**	**15.6**	**30.07**	**11.8**	**22.74**
Selenium	0.0276	mg/kg	**0.35**	**0.94**												
Silver	0.08	mg/kg														
Thallium	0.05	mg/kg														
Vanadium	0.714	mg/kg	**12.8**	**19.52**	**13.5**	**20.59**	**10.9**	**16.62**	**14**	**21.35**	**12.9**	**19.67**	**13.1**	**19.98**	**11.8**	**18.00**
Zinc	6.62	mg/kg	**46.5**	**108.01**	**54.2**	**125.90**	**306**	**710.80**	**51.8**	**120.33**	**49.9**	**115.91**	**51**	**118.47**	**46.2**	**107.32**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum
Highlighted cells indicate values that exceed the EPA
Minimum Screening Levels following the RPD
adjustment triggering the need to resample

Preliminary - Under EPA MMLQ Review

Table M7. Metals RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

		Sample Designation:	CFISS-010-SO-0-0.5		CFISS-011-SO-0.5-2		CFISS-011-SO-0-0.5		CFISS-011-SO-0-0.5-Pb		CFISS-012-SO-0.5-2		CFISS-012-SO-0-0.5		CFISS-013-SO-0.5-2	
		Sample Location:	CFISS-010		CFISS-011		CFISS-011		CFISS-011		CFISS-012		CFISS-012		CFISS-013	
		Sample Date:	6/22/2016		6/21/2016		6/21/2016		6/21/2016		6/21/2016		6/21/2016		6/20/2016	
		Sample Depth:	0 - 0.5		0.5 - 2		0 - 0.5		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2	
		Resample	No		No		No		No		No		No		No	
Parameter	EPA Minimum Screening Levels	Units	RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value	
Aluminum	50	mg/kg	**14300**	**20892.45**	**11900**	**17386.03**	**10600**	**15486.71**			**10500**	**15340.61**	**9720**	**14201.03**	**14400**	**21038.56**
Antimony	0.035	mg/kg					**0.62**	**1.66**								
Arsenic	0.0015	mg/kg	**4.5**	**6.62**	**5.1**	**7.51**	**4.6**	**6.77**			**4.3**	**6.33**	**4.5**	**6.62**	**5.8**	**8.54**
Barium	1.04	mg/kg	**112**	**167.01**	**92.9**	**138.53**	**69.6**	**103.78**			**90.9**	**135.54**	**75**	**111.84**	**121**	**180.43**
Beryllium	1.06	mg/kg	0.47	0.75	0.47	0.75	0.4	0.64			0.36	0.58	0.41	0.66	0.66	1.06
Cadmium	0.00222	mg/kg														
Chromium	0.4	mg/kg	**10.6**	**22.73**	**11.3**	**24.23**	**10.8**	**23.16**			**11.1**	**23.80**	**10.1**	**21.66**	**21**	**45.04**
Cobalt	0.027	mg/kg	**5.7**	**7.83**	**5.7**	**7.83**	**5.3**	**7.28**			**5.1**	**7.01**	**4.7**	**6.46**	**7.9**	**10.85**
Copper	2.8	mg/kg	**17.5**	**52.07**	**12.6**	**37.49**	**18.1**	**53.85**			**17**	**50.58**	**15.9**	**47.31**	**26.4**	**78.55**
Cyanide, Total	0.0015	mg/kg	**0.063**	**0.13**	**0.033**	**0.07**	**0.04**	**0.09**			**0.083**	**0.18**	**0.096**	**0.21**	**0.18**	**0.38**
Iron	35	mg/kg	**15800**	**21256.58**	**15900**	**21391.12**	**14500**	**19507.62**			**14400**	**19373.09**	**13300**	**17893.20**	**22900**	**30808.59**
Lead	0.0537	mg/kg	**13.7**	**40.77**	**10.1**	**30.06**	**13.6**	**40.47**	**17.2**	**51.19**	**8.1**	**24.10**	**14.9**	**44.34**	**14.4**	**42.85**
Manganese	2.8	mg/kg	**497**	**737.49**	**438**	**649.94**	**394**	**584.65**			**419**	**621.75**	**471**	**698.91**	**528**	**783.49**
Mercury	0.0033	mg/kg	**0.056**	**0.12**	**0.018**	**0.04**	**0.016**	**0.03**			**0.023**	**0.05**	**0.023**	**0.05**	**0.017**	**0.04**
Nickel	9.7	mg/kg	**19.3**	**37.20**	**12**	**23.13**	**17.2**	**33.15**			**12.1**	**23.32**	**17.6**	**33.92**	**15.8**	**30.45**
Selenium	0.0276	mg/kg														
Silver	0.08	mg/kg														
Thallium	0.05	mg/kg														
Vanadium	0.714	mg/kg	**13.3**	**20.28**	**10.8**	**16.47**	**11.5**	**17.54**			**9.2**	**14.03**	**10.4**	**15.86**	**19.7**	**30.04**
Zinc	6.62	mg/kg	**56.6**	**131.48**	**47.9**	**111.27**	**59.1**	**137.28**			**47.2**	**109.64**	**49.2**	**114.29**	**72.5**	**168.41**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum
Highlighted cells indicate values that exceed the EPA
Minimum Screening Levels following the RPD
adjustment triggering the need to resample

Preliminary - Under EPA and MDEQ Review

Table M7. Metals RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

		Sample Designation:	CFISS-013-SO-0-0.5		CFISS-013-SO-0-0.5-Pb		CFISS-014-SO-0.5-2		CFISS-014-SO-0-0.5		CFISS-015-SO-0.5-2		CFISS-015-SO-0-0.5	
		Sample Location:	CFISS-013		CFISS-013		CFISS-014		CFISS-014		CFISS-015		CFISS-015	
		Sample Date:	6/20/2016		6/20/2016		6/20/2016		6/20/2016		6/18/2016		6/18/2016	
		Sample Depth:	0 - 0.5		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5	
		Resample	No		No		Yes		Yes		No		No	
Parameter	EPA Minimum Screening Levels	Units	RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value	
Aluminum	50	mg/kg	**17100**	**24983.29**			**16900**	**24691.08**	**18900**	**27613.10**	**16200**	**23668.38**	**19200**	**28051.41**
Antimony	0.035	mg/kg												
Arsenic	0.0015	mg/kg	**4.6**	**6.77**			**4.9**	**7.21**	**5.7**	**8.39**	**4.9**	**7.21**	**5.6**	**8.24**
Barium	1.04	mg/kg	**86**	**128.24**			**101**	**150.61**	**101**	**150.61**	**84.2**	**125.55**	**96.2**	**143.45**
Beryllium	1.06	mg/kg	0.55	0.88			0.76	**1.22**	0.96	**1.54**	0.53	0.85	0.62	0.99
Cadmium	0.00222	mg/kg	**0.33**	**0.55**										
Chromium	0.4	mg/kg	**17.5**	**37.53**			**17.2**	**36.89**	**14.5**	**31.10**	**11.7**	**25.09**	**11.7**	**25.09**
Cobalt	0.027	mg/kg	**5.2**	**7.14**			**7.9**	**10.85**	**5.8**	**7.97**	**5.3**	**7.28**	**6.2**	**8.52**
Copper	2.8	mg/kg	**23.2**	**69.03**			**34.2**	**101.76**	**26.6**	**79.14**	**21.5**	**63.97**	**13.9**	**41.36**
Cyanide, Total	0.0015	mg/kg	**0.14**	**0.30**			**2.5**	**5.34**	**2.3**	**4.92**	**1.6**	**3.42**	**0.71**	**1.52**
Iron	35	mg/kg	**18800**	**25292.64**			**22600**	**30404.98**	**17600**	**23678.22**	**14400**	**19373.09**	**14700**	**19776.69**
Lead	0.0537	mg/kg	**17.7**	**52.67**	**29.4**	**87.49**	**49.9**	**148.50**	**40.2**	**119.63**	**9.5**	**28.27**	**11.7**	**34.82**
Manganese	2.8	mg/kg	**356**	**528.26**			**482**	**715.23**	**408**	**605.42**	**419**	**621.75**	**417**	**618.78**
Mercury	0.0033	mg/kg	**0.019**	**0.04**			**0.022**	**0.05**	**0.017**	**0.04**	**0.019**	**0.04**	**0.021**	**0.04**
Nickel	9.7	mg/kg	**26.4**	**50.88**			**17.1**	**32.96**	**26.4**	**50.88**	**13**	**25.06**	**29.4**	**56.66**
Selenium	0.0276	mg/kg							**0.45**	**1.21**			**0.95**	**2.55**
Silver	0.08	mg/kg												
Thallium	0.05	mg/kg												
Vanadium	0.714	mg/kg	**16.6**	**25.32**			**23**	**35.08**	**17.2**	**26.23**	**11.1**	**16.93**	**15.7**	**23.94**
Zinc	6.62	mg/kg	**53.4**	**124.04**			**67.7**	**157.26**	**72**	**167.25**	**45.5**	**105.69**	**59.2**	**137.52**

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum
Highlighted cells indicate values that exceed the EPA
Minimum Screening Levels following the RPD
adjustment triggering the need to resample

Preliminary - Under EPA and MDEQ Review

Table M8. Polychlorinated Biphenyl RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Designation:	CFISS-001-SO-0.5-2	CFISS-001-SO-0-0.5	CFISS-003-SO-0.5-2	CFISS-003-SO-0-0.5	CFISS-004-SO-0.5-2	CFISS-004-SO-0-0.5	CFISS-005-SO-0.5-2	CFISS-005-SO-0-0.5	CFISS-007-SO-0.5-2	CFISS-007-SO-0-0.5
			Sample Location:	CFISS-001	CFISS-001	CFISS-003	CFISS-003	CFISS-004	CFISS-004	CFISS-005	CFISS-005	CFISS-007	CFISS-007
			Sample Date:	6/14/2016	6/14/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016	6/16/2016	6/16/2016	6/17/2016	6/17/2016
			Sample Depth:	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Resample:	No	No	No	No	No	No	No	No	No	No
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%										
Aroclor 1016	0.013	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor 1221	0.000079	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor 1232	0.000079	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor 1242	0.0012	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor 1248	0.0012	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor 1254	0.002	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	**0.057 J**	0.076 U
Aroclor 1260	0.0055	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor 1268	--	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Aroclor-1262	--	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.074 U	0.076 U
Polychlorinated biphenyls, Total	--	mg/kg	--	0.076 U	0.075 U	0.073 U	0.074 U	0.076 U	0.075 U	0.074 U	0.074 U	0.057 J	0.076 U

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level

Preliminary - Under EPA and MDEQ Review

Table M8. Polychlorinated Biphenyl RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Designation:	CFISS-009-SO-0.5-2	CFISS-009-SO-0-0.5	CFISS-010-SO-0.5-2	CFISS-010-SO-0-0.5	CFISS-011-SO-0.5-2	CFISS-011-SO-0-0.5	CFISS-012-SO-0.5-2	CFISS-012-SO-0-0.5	CFISS-013-SO-0.5-2	CFISS-013-SO-0-0.5
			Sample Location:	CFISS-009	CFISS-009	CFISS-010	CFISS-010	CFISS-011	CFISS-011	CFISS-012	CFISS-012	CFISS-013	CFISS-013
			Sample Date:	6/22/2016	6/22/2016	6/22/2016	6/22/2016	6/21/2016	6/21/2016	6/21/2016	6/21/2016	6/20/2016	6/20/2016
			Sample Depth:	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Resample:	No	No	No	No	No	No	No	No	No	No
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%										
Aroclor 1016	0.013	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor 1221	0.000079	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor 1232	0.000079	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor 1242	0.0012	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor 1248	0.0012	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor 1254	0.002	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	**0.07 J**	**0.21**
Aroclor 1260	0.0055	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor 1268	--	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Aroclor-1262	--	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.072 U	0.071 U
Polychlorinated biphenyls, Total	--	mg/kg	--	0.075 U	0.077 U	0.077 U	0.074 U	0.075 U	0.073 U	0.072 U	0.072 U	0.07 J	0.21

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level

Preliminary - Under EPA and MDEQ Review

Table M8. Polychlorinated Biphenyl RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Designation:	CFISS-014-SO-0.5-2	CFISS-014-SO-0-0.5	CFISS-015-SO-0.5-2	CFISS-015-SO-0-0.5
			Sample Location:	CFISS-014	CFISS-014	CFISS-015	CFISS-015
			Sample Date:	6/20/2016	6/20/2016	6/18/2016	6/18/2016
			Sample Depth:	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5
			Resample:	No	No	No	No
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%				
Aroclor 1016	0.013	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1221	0.000079	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1232	0.000079	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1242	0.0012	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1248	0.0012	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1254	0.002	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1260	0.0055	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor 1268	--	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Aroclor-1262	--	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U
Polychlorinated biphenyls, Total	--	mg/kg	--	0.072 U	0.073 U	0.076 U	0.074 U

RPD - Relative Percent Difference
Shaded cells indicate non-detect values
Bold cells indicate values that exceed the EPA Minimum Screening Level

Preliminary - Under EPA and MDEQ Review

Table M9. Organochlorine Pesticides RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:				CFISS-001-SO-0-0.5	CFISS-003-SO-0-0.5	CFISS-004-SO-0-0.5	CFISS-005-SO-0-0.5	CFISS-007-SO-0-0.5	CFISS-009-SO-0-0.5	CFISS-010-SO-0-0.5	CFISS-011-SO-0-0.5	CFISS-012-SO-0-0.5
Sample Location:				CFISS-001	CFISS-003	CFISS-004	CFISS-005	CFISS-007	CFISS-009	CFISS-010	CFISS-011	CFISS-012
Sample Date:				6/14/2016	6/15/2016	6/15/2016	6/16/2016	6/17/2016	6/22/2016	6/22/2016	6/21/2016	6/21/2016
Sample Depth:				0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Resample:				No	No	No	No	No	No	No	No	No
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%									
4,4'-DDD	0.00488	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
4,4'-DDE	0.021	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
4,4'-DDT	0.0035	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Aldrin	0.00015	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
alpha-BHC	0.000041	mg/kg	--	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
alpha-Chlordane	--	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
beta-BHC	0.00014	mg/kg	--	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
delta-BHC	9.94	mg/kg	--	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
Dieldrin	0.000069	mg/kg	--	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
Endosulfan I	0.119	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Endosulfan II	0.119	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Endosulfan sulfate	0.0358	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Endrin	0.0014	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Endrin aldehyde	0.0105	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Endrin ketone	--	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
gamma-BHC (Lindane)	0.00024	mg/kg	--	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0023 U	0.0022 U	0.0022 U	0.0022 U
gamma-Chlordane	--	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Heptachlor	0.00011	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Heptachlor epoxide	0.000028	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Methoxychlor	0.2	mg/kg	--	0.0075 U	0.0074 U	0.0075 U	0.0074 U	0.0076 U	0.0077 U	0.0074 U	0.0073 U	0.0072 U
Toxaphene	0.0024	mg/kg	--	0.075 U	0.074 U	0.075 U	0.074 U	0.076 U	0.077 U	0.074 U	0.073 U	0.072 U

RPD - Relative Percent Difference
Shaded cells indicate non-detect values

Preliminary - Under EPA and CDEQ Review

Table M9. Organochlorine Pesticides RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

		Sample Designation:	CFISS-013-SO-0-0.5	CFISS-014-SO-0-0.5	CFISS-015-SO-0-0.5
		Sample Location:	CFISS-013	CFISS-014	CFISS-015
		Sample Date:	6/20/2016	6/20/2016	6/18/2016
		Sample Depth:	0 - 0.5	0 - 0.5	0 - 0.5
		Resample:	No	No	No
Parameter	EPA Minimum Screening Levels	Units			
4,4'-DDD	0.00488	mg/kg	0.0071 U	0.0073 U	0.0074 U
4,4'-DDE	0.021	mg/kg	0.0071 U	0.0073 U	0.0074 U
4,4'-DDT	0.0035	mg/kg	0.0071 U	0.0073 U	0.0074 U
Aldrin	0.00015	mg/kg	0.0071 U	0.0073 U	0.0074 U
alpha-BHC	0.000041	mg/kg	0.0021 U	0.0022 U	0.0022 U
alpha-Chlordane	--	mg/kg	0.0071 U	0.0073 U	0.0074 U
beta-BHC	0.00014	mg/kg	0.0021 U	0.0022 U	0.0022 U
delta-BHC	9.94	mg/kg	0.0021 U	0.0022 U	0.0022 U
Dieldrin	0.000069	mg/kg	0.0021 U	0.0022 U	0.0022 U
Endosulfan I	0.119	mg/kg	0.0071 U	0.0073 U	0.0074 U
Endosulfan II	0.119	mg/kg	0.0071 U	0.0073 U	0.0074 U
Endosulfan sulfate	0.0358	mg/kg	0.0071 U	0.0073 U	0.0074 U
Endrin	0.0014	mg/kg	0.0071 U	0.0073 U	0.0074 U
Endrin aldehyde	0.0105	mg/kg	0.0071 U	0.0073 U	0.0074 U
Endrin ketone	--	mg/kg	0.0071 U	0.0073 U	0.0074 U
gamma-BHC (Lindane)	0.00024	mg/kg	0.0021 U	0.0022 U	0.0022 U
gamma-Chlordane	--	mg/kg	0.0071 U	0.0073 U	0.0074 U
Heptachlor	0.00011	mg/kg	0.0071 U	0.0073 U	0.0074 U
Heptachlor epoxide	0.000028	mg/kg	0.0071 U	0.0073 U	0.0074 U
Methoxychlor	0.2	mg/kg	0.0071 U	0.0073 U	0.0074 U
Toxaphene	0.0024	mg/kg	0.071 U	0.073 U	0.074 U

RPD - Relative Percent Difference
Shaded cells indicate non-detect values

Preliminary - Under EPA and MDEQ Review

Table M10. General Chemistry RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:				CFISS-001-SO-0.5-2		CFISS-001-SO-0-0.5		CFISS-003-SO-0.5-2		CFISS-003-SO-0-0.5		CFISS-004-SO-0.5-2		CFISS-004-SO-0-0.5		CFISS-005-SO-0.5-2	
Sample Location:				CFISS-001		CFISS-001		CFISS-003		CFISS-003		CFISS-004		CFISS-004		CFISS-005	
Sample Date:				6/14/2016		6/14/2016		6/15/2016		6/15/2016		6/15/2016		6/15/2016		6/16/2016	
Sample Depth:				0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2	
Resample				No		No		No		No		No		No		No	
Parameter	EPA Minimum Screening Levels	Units	MAX RPD +10%		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
Fluoride	**6.5**	mg/kg	202.52	**36**	**107.39**	**10**	**31.46**	**270**	**816.80**	**680**	**2057.13**	**81**	**246.25**	**87**	**262.28**	**62**	**186.96**

RPD - Relative Percent Difference
Bold cells indicate values that exceed the
EPA Minimum Screening Level

Preliminary - Under EPA and MDEQ Review

Table M10. General Chemistry RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-005-SO-0-0.5		CFISS-007-SO-0.5-2		CFISS-007-SO-0-0.5		CFISS-009-SO-0.5-2		CFISS-009-SO-0-0.5		CFISS-010-SO-0.5-2		CFISS-010-SO-0-0.5		CFISS-011-SO-0.5-2	
Sample Location:			CFISS-005		CFISS-007		CFISS-007		CFISS-009		CFISS-009		CFISS-010		CFISS-010		CFISS-011	
Sample Date:			6/16/2016		6/17/2016		6/17/2016		6/22/2016		6/22/2016		6/22/2016		6/22/2016		6/21/2016	
Sample Depth:			0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2	
Resample			No		No		No		No		No		No		No		No	
Parameter	EPA Minimum Screening Levels	Units		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
Fluoride	**6.5**	mg/kg	**55**	**166.08**	**141**	**426.55**	**189**	**571.76**	**54**	**162.76**	**22**	**65.95**	**28**	**85.61**	**34**	**102.25**	**61**	**184.23**

RPD - Relative Percent Difference
Bold cells indicate values that exceed the
EPA Minimum Screening Level

Preliminary - Under EPA and MDEQ Review

Table M10. General Chemistry RPD Adjusted Value
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Designation:			CFISS-011-SO-0-0.5		CFISS-012-SO-0.5-2		CFISS-012-SO-0-0.5		CFISS-013-SO-0.5-2		CFISS-013-SO-0-0.5		CFISS-014-SO-0.5-2		CFISS-014-SO-0-0.5		CFISS-015-SO-0.5-2		CFISS-015-SO-0-0.5	
Sample Location:			CFISS-011		CFISS-012		CFISS-012		CFISS-013		CFISS-013		CFISS-014		CFISS-014		CFISS-015		CFISS-015	
Sample Date:			6/21/2016		6/21/2016		6/21/2016		6/20/2016		6/20/2016		6/20/2016		6/20/2016		6/18/2016		6/18/2016	
Sample Depth:			0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5		0.5 - 2		0 - 0.5	
Resample			No		No		No		No		No		No		No		No		No	
Parameter	EPA Minimum Screening Levels	Units		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value		RPD Adjusted Value
Fluoride	**6.5**	mg/kg	**41**	**124.64**	**53**	**160.03**	**46**	**137.65**	**337**	**1019.49**	**254**	**768.40**	**598**	**1809.07**	**318**	**962.01**	**379**	**1146.55**	**372**	**1125.37**

RPD - Relative Percent Difference
Bold cells indicate values that exceed the
EPA Minimum Screening Level

Preliminary - Under EPA and MDEQ Review

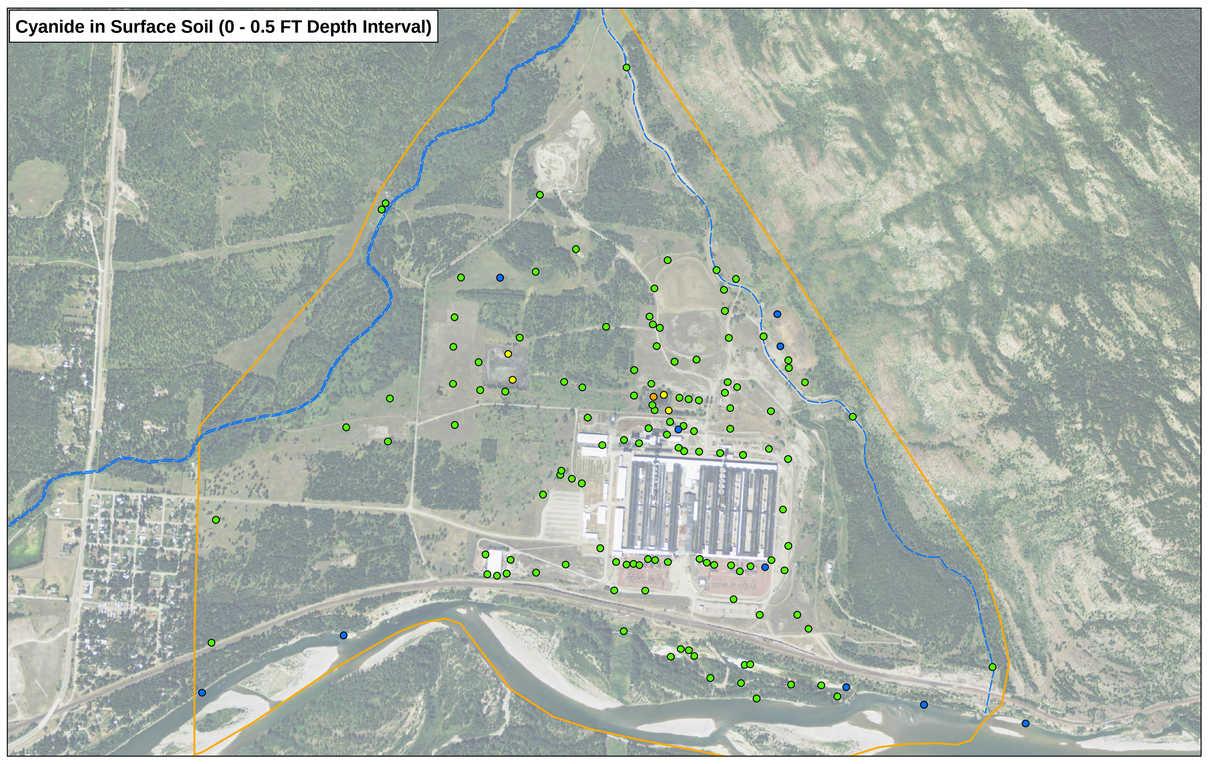
APPENDIX N

Soil Thematic Maps

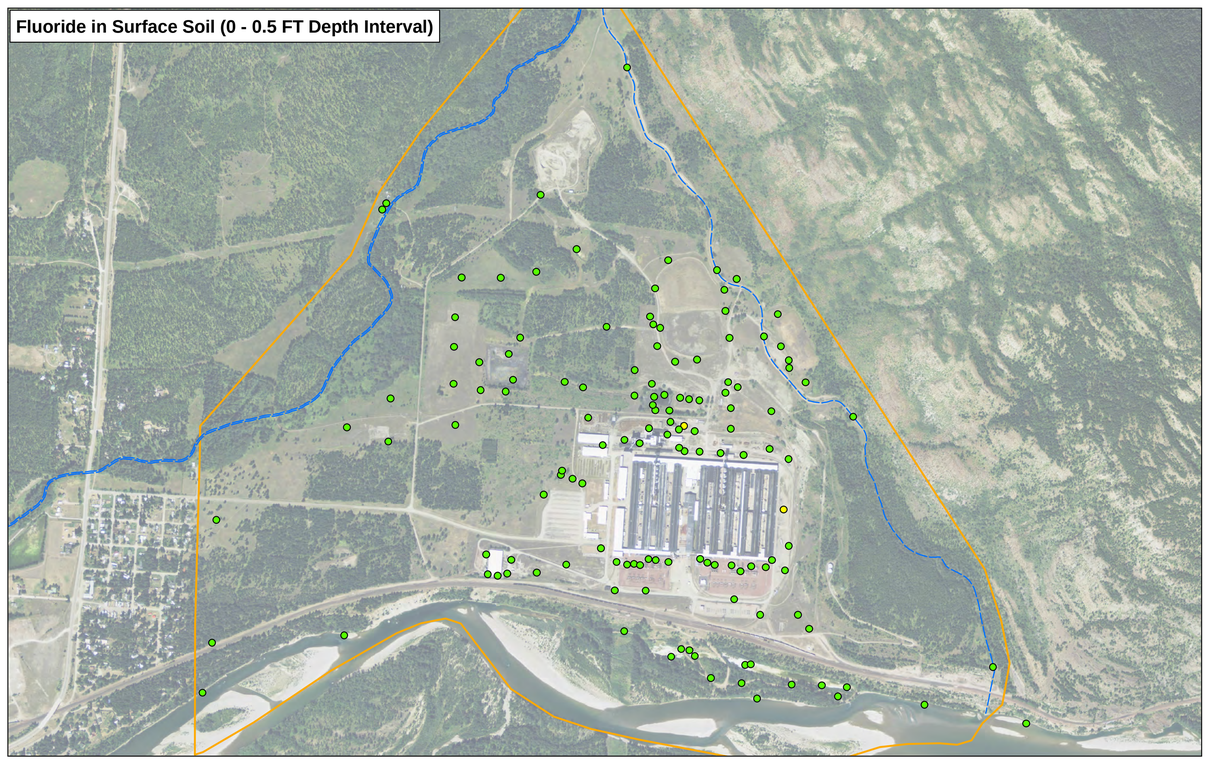
1. Concentrations of Cyanide and Fluoride in Soil
2. Concentrations of Selected PAHs in Surface Soil
3. Concentrations of Selected PAHs in Shallow Soil
4. Concentrations of Selected PAHs in Intermediate Depth Soil
5. Concentrations of Selected Metals in Surface Soil
6. Concentrations of Selected Metals in Shallow Soil
7. Concentrations of Selected Metals in Intermediate Depth Soil
8. Concentrations of Cyanide and Fluoride in Incremental Soil Samples from Operational Grid Area
9. Concentrations of Selected PAHs in Incremental Surface Soil Samples from Operational Grid Area
10. Concentrations of Selected PAHs in Incremental Shallow Soil Samples from Operational Grid Area
11. Concentrations of Selected Metals in Incremental Surface Soil Samples from Operational Grid Area
12. Concentrations of Selected Metals in Incremental Shallow Soil Samples from Selected Metals in Shallow ISM Soil Samples

Preliminary - Under EPA and MDEQ Review

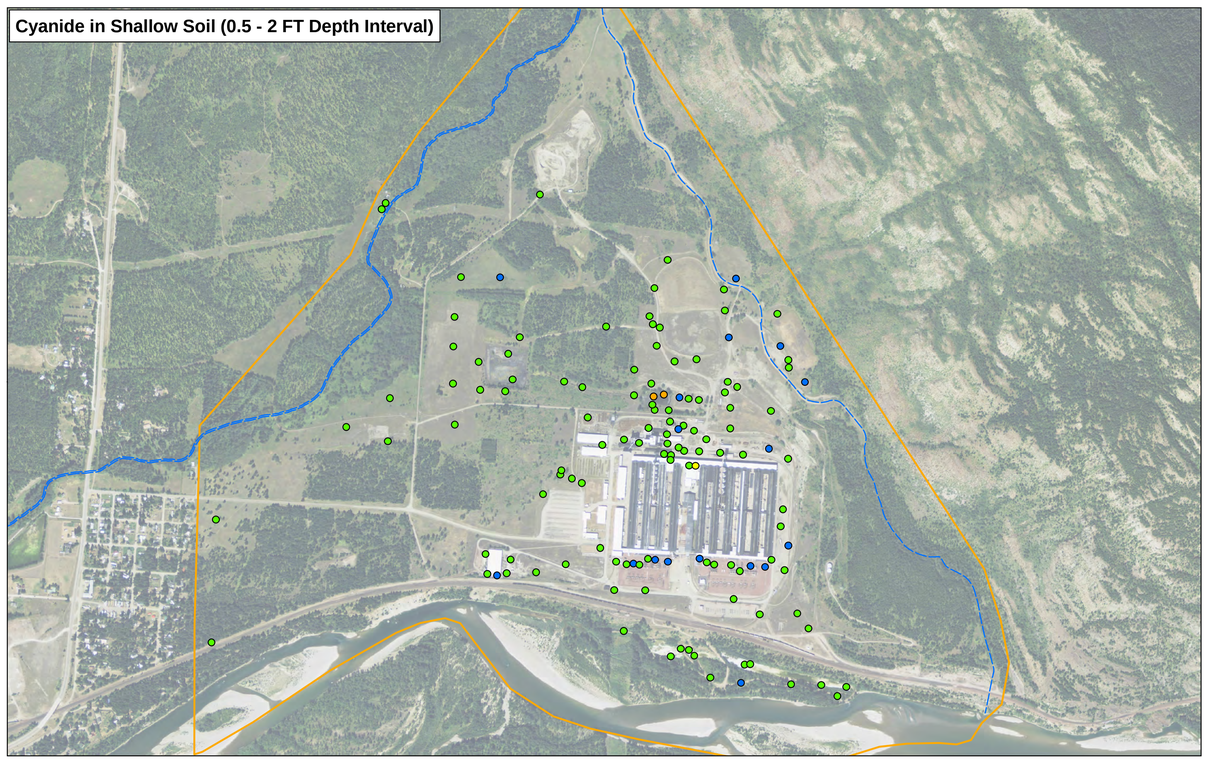
Cyanide in Surface Soil (0 - 0.5 FT Depth Interval)



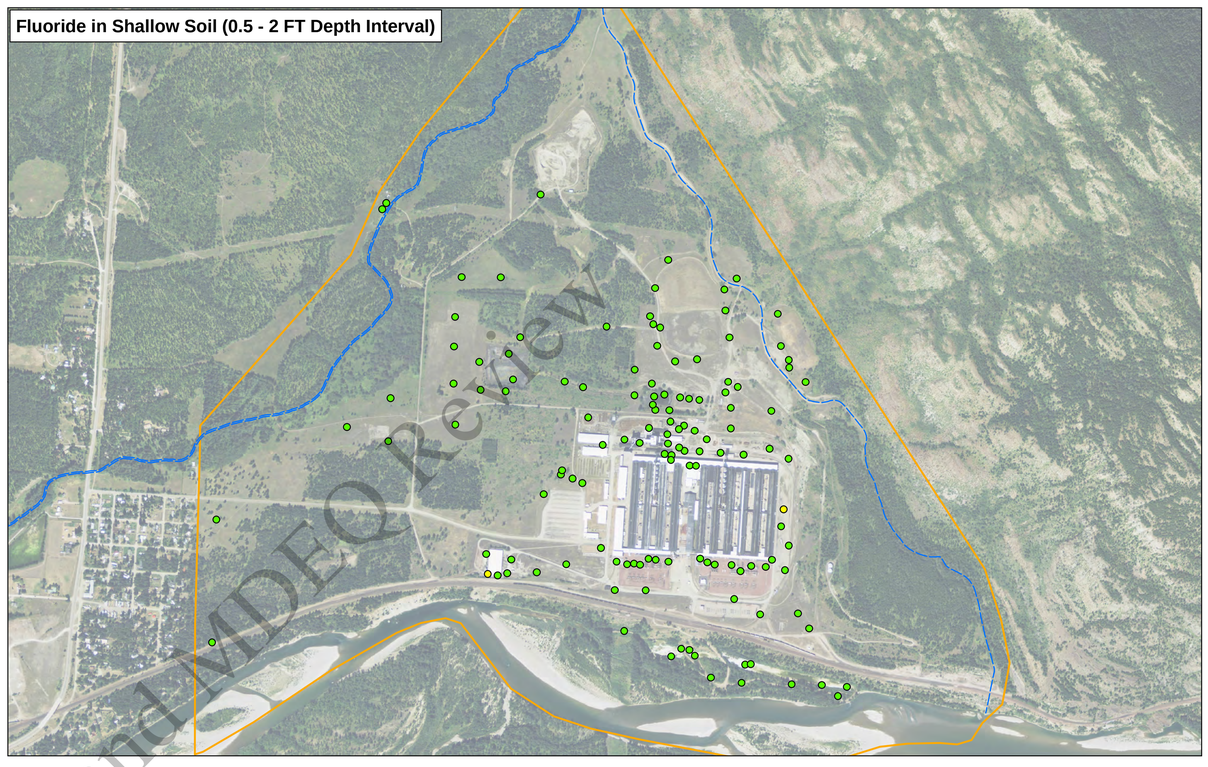
Fluoride in Surface Soil (0 - 0.5 FT Depth Interval)



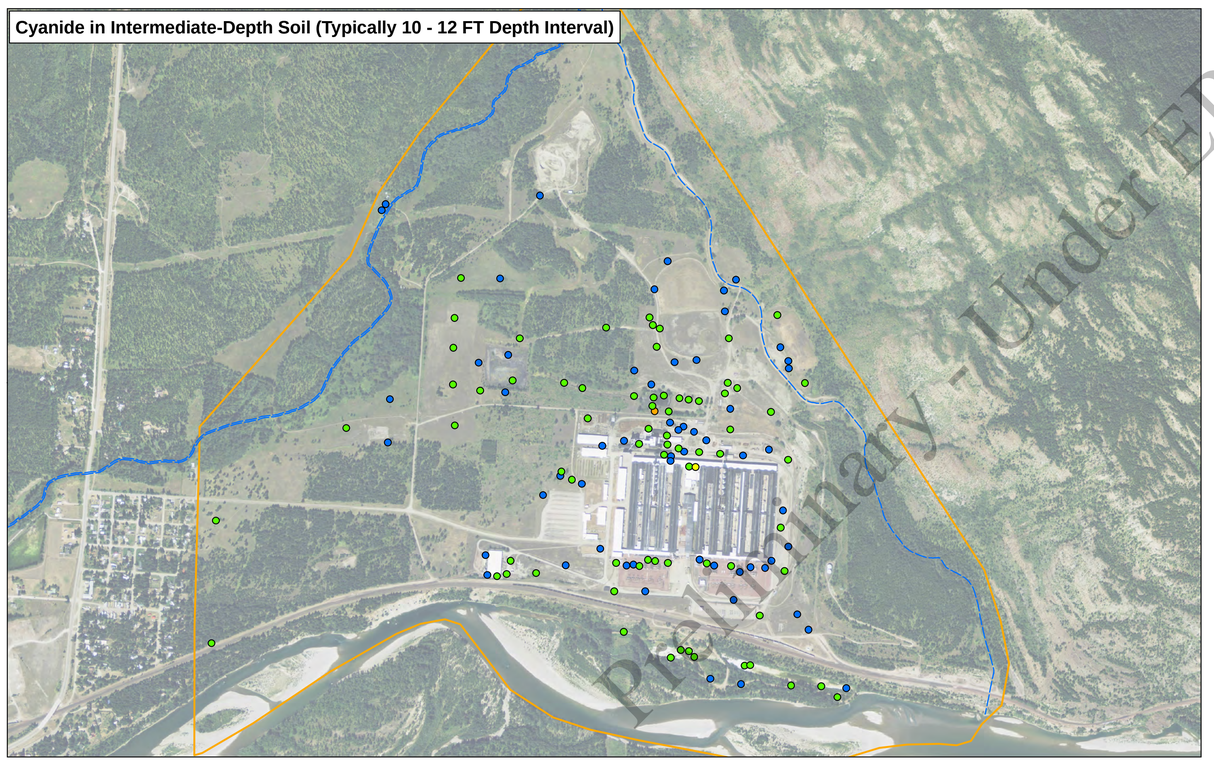
Cyanide in Shallow Soil (0.5 - 2 FT Depth Interval)



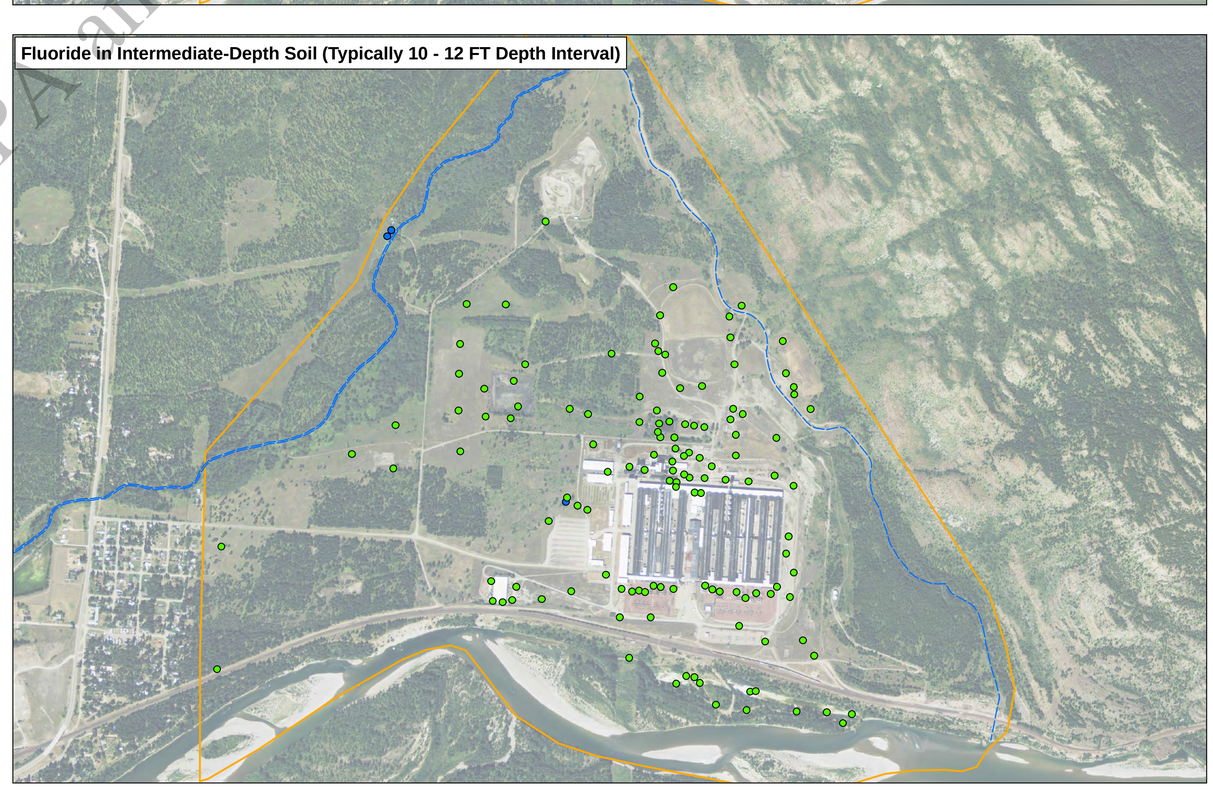
Fluoride in Shallow Soil (0.5 - 2 FT Depth Interval)



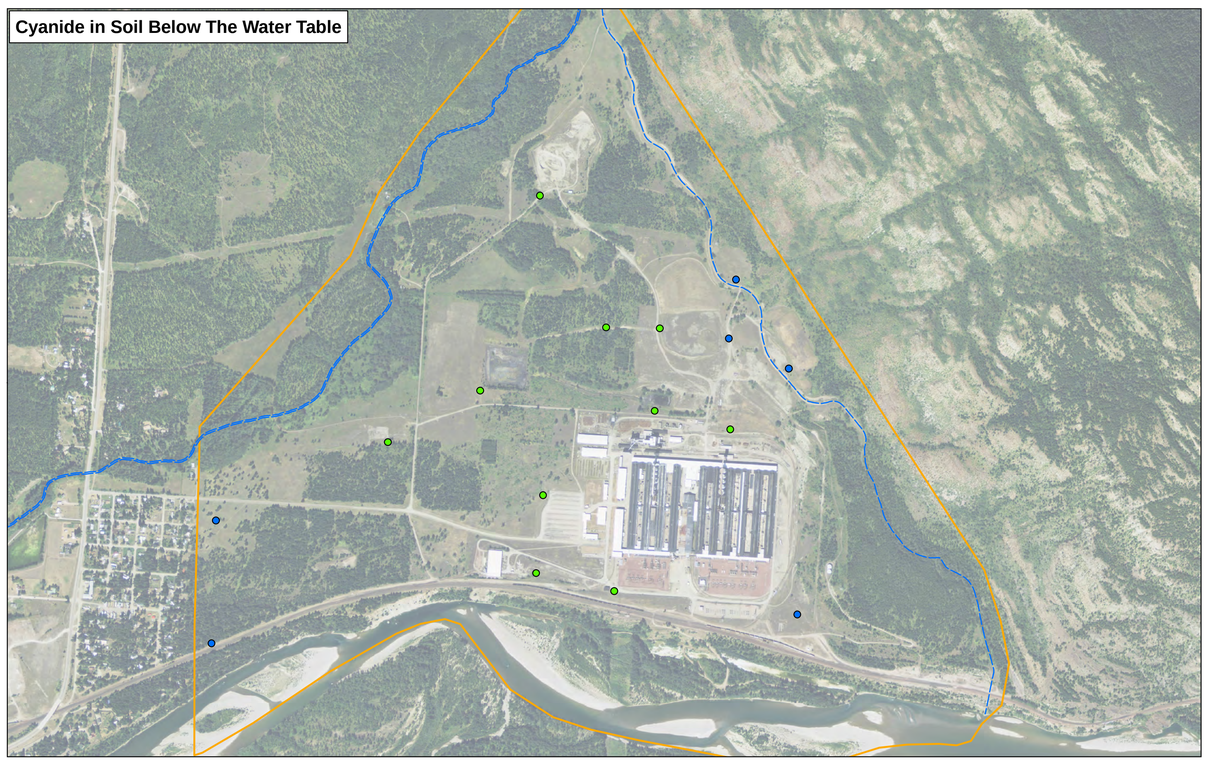
Cyanide in Intermediate-Depth Soil (Typically 10 - 12 FT Depth Interval)



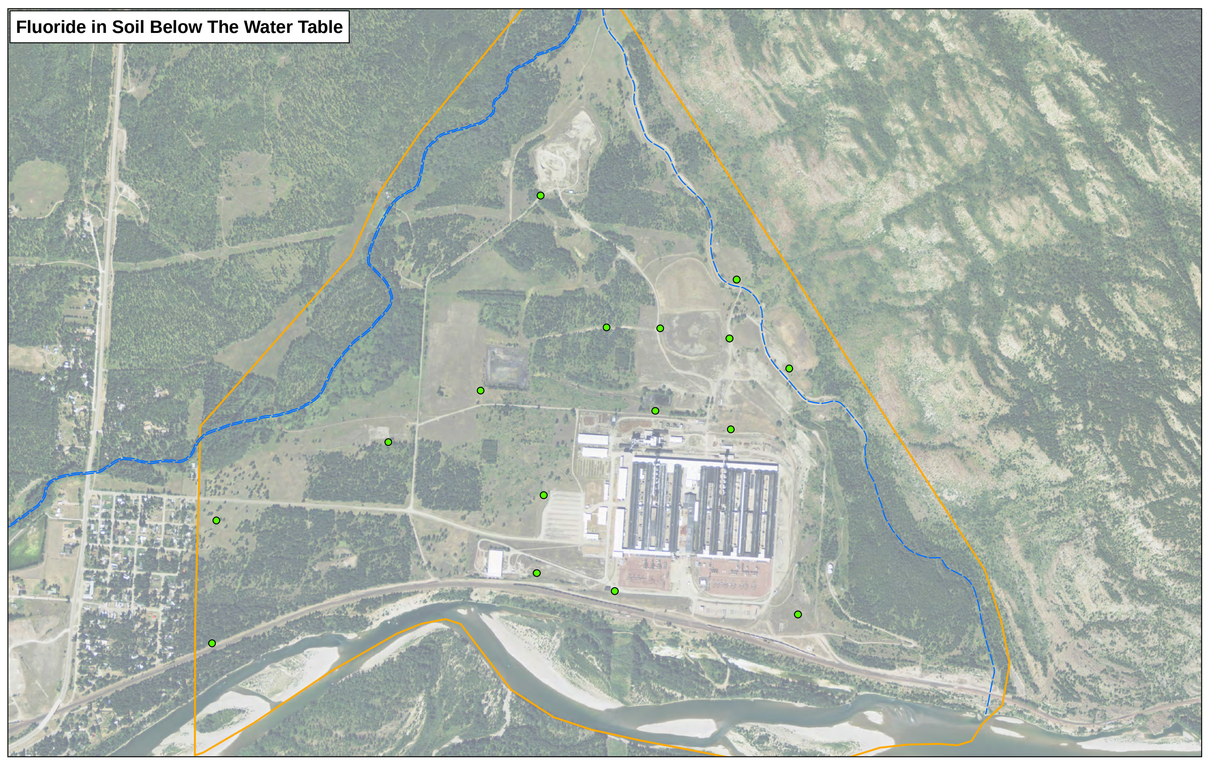
Fluoride in Intermediate-Depth Soil (Typically 10 - 12 FT Depth Interval)



Cyanide in Soil Below The Water Table



Fluoride in Soil Below The Water Table



Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Cyanide	2.3	15
Fluoride	310	4700

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms

N

1,750 0 1,750 Feet

Title:

CONCENTRATIONS OF CYANIDE AND FLUORIDE IN SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

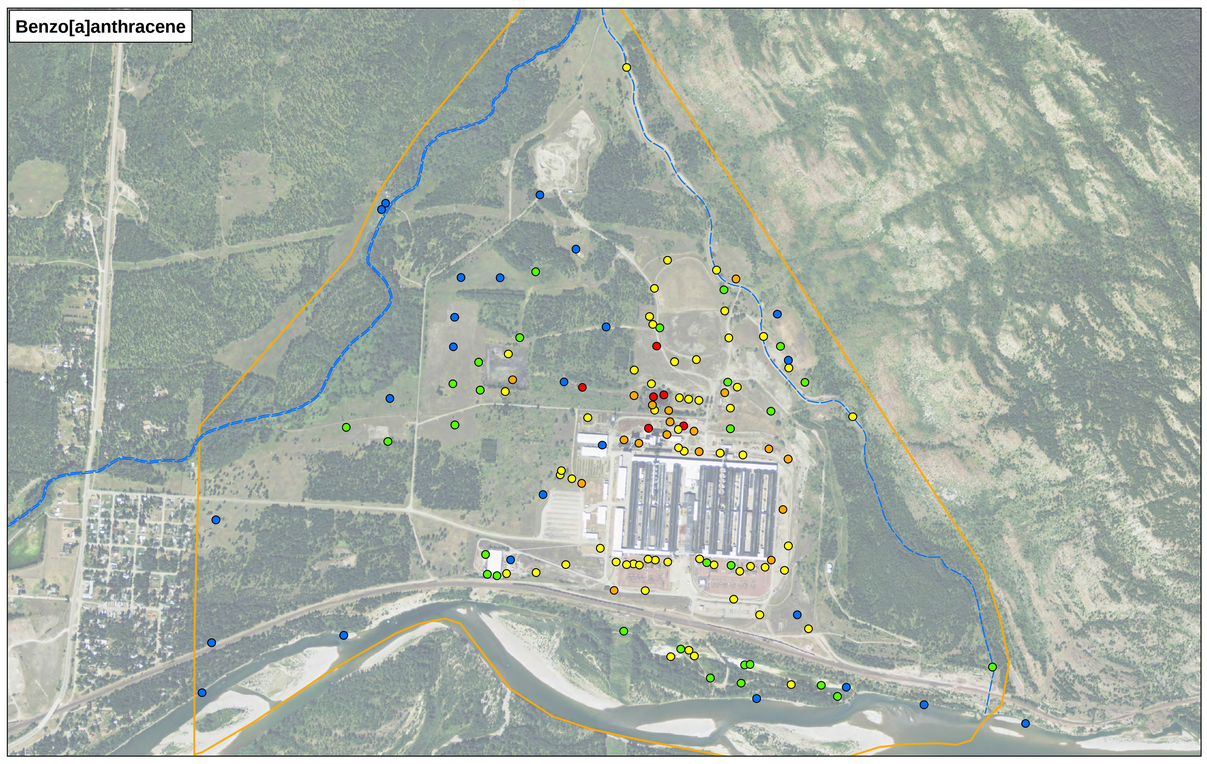
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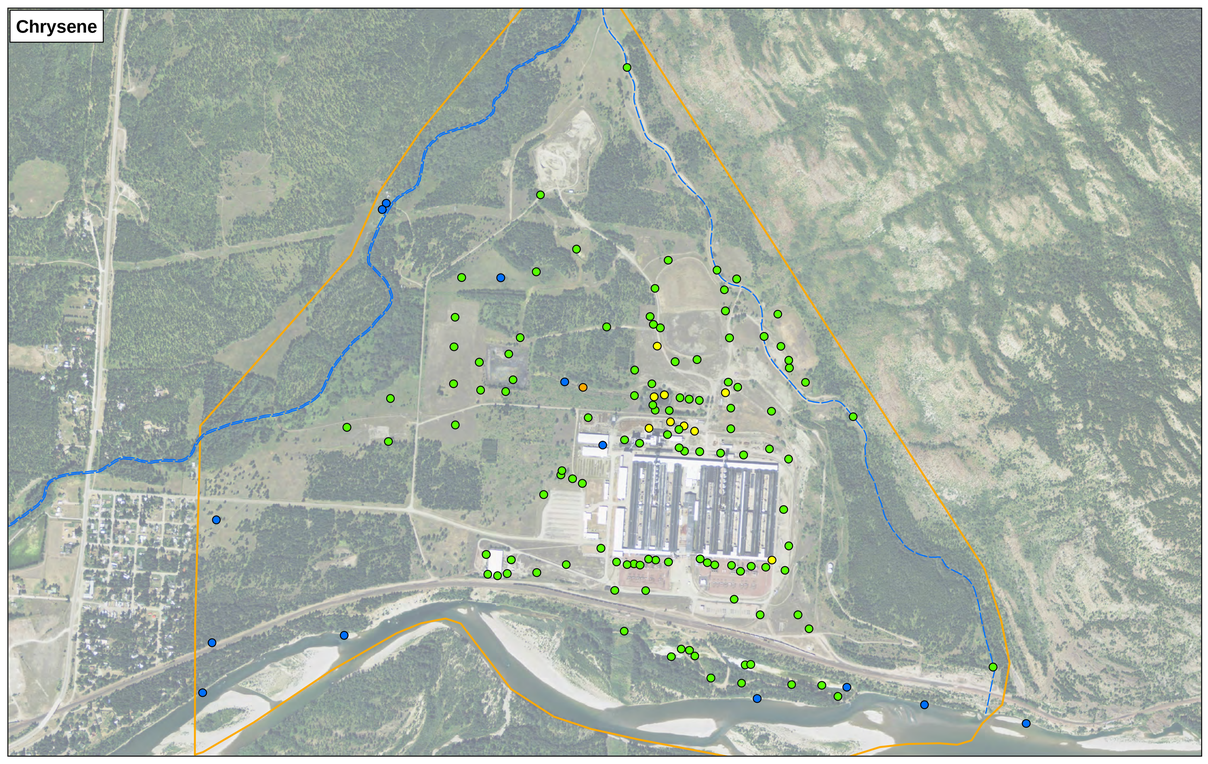
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

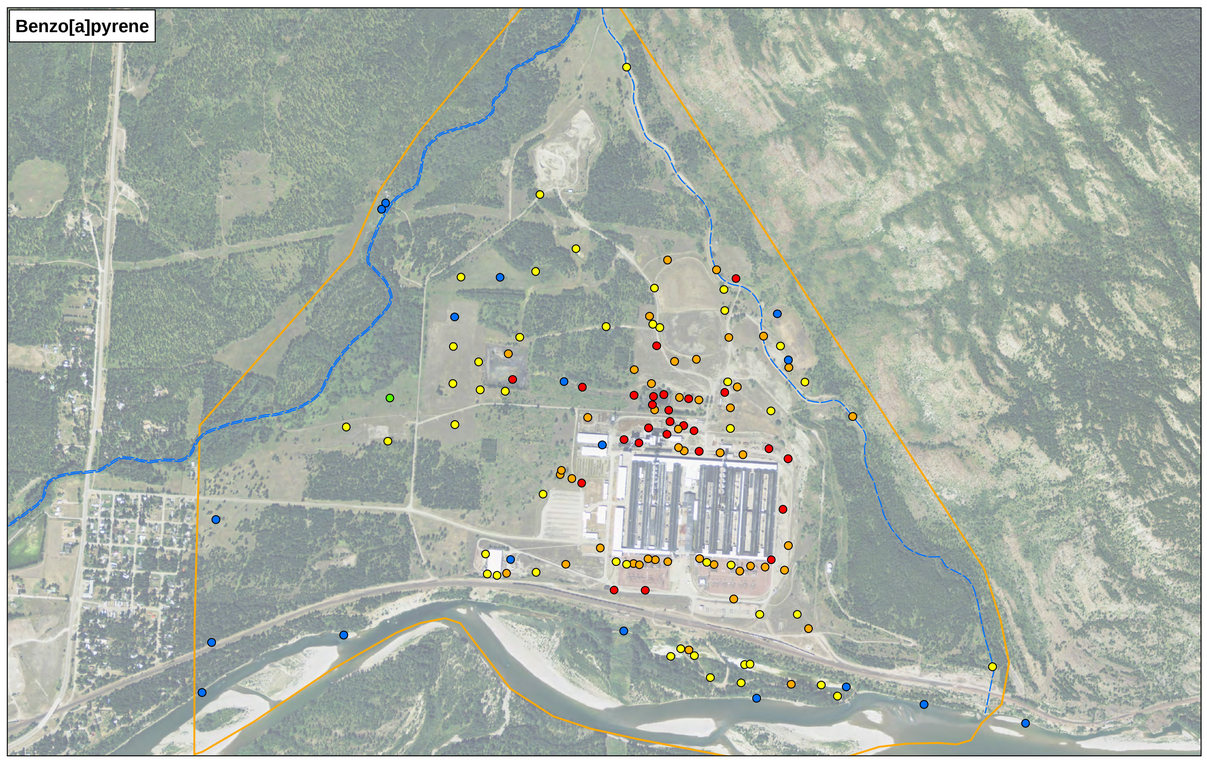
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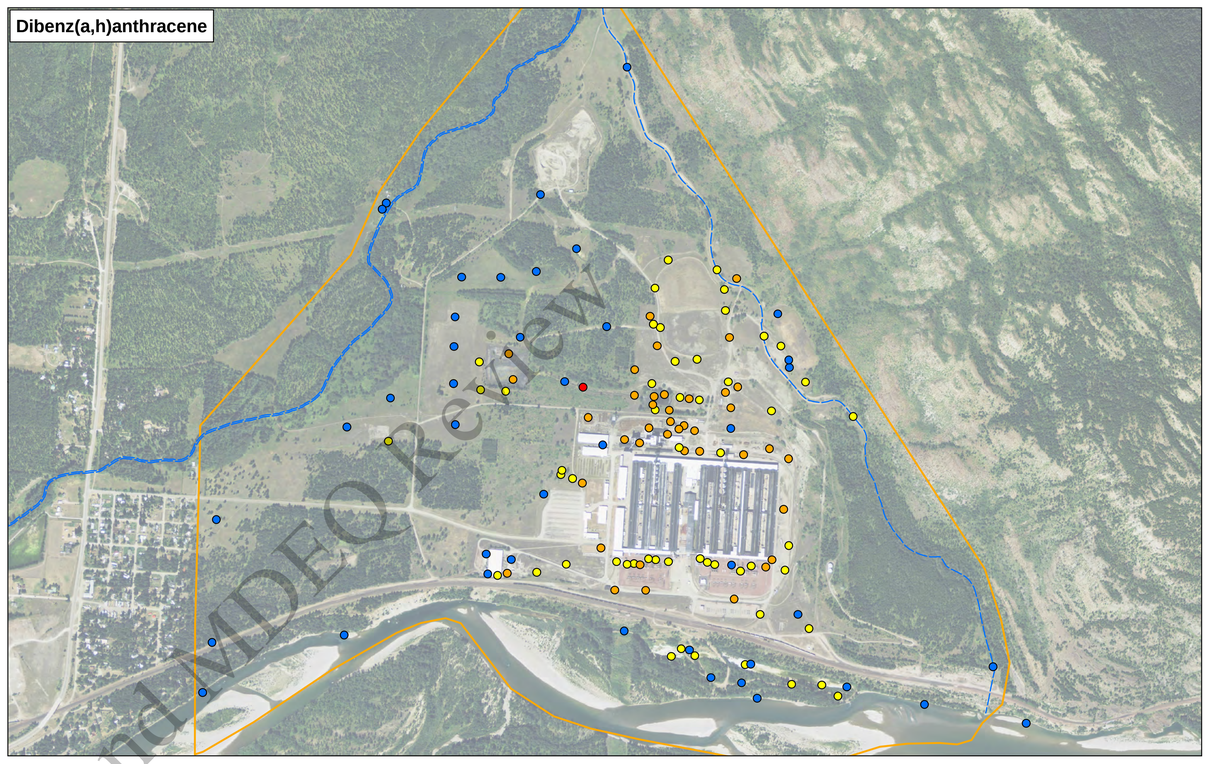
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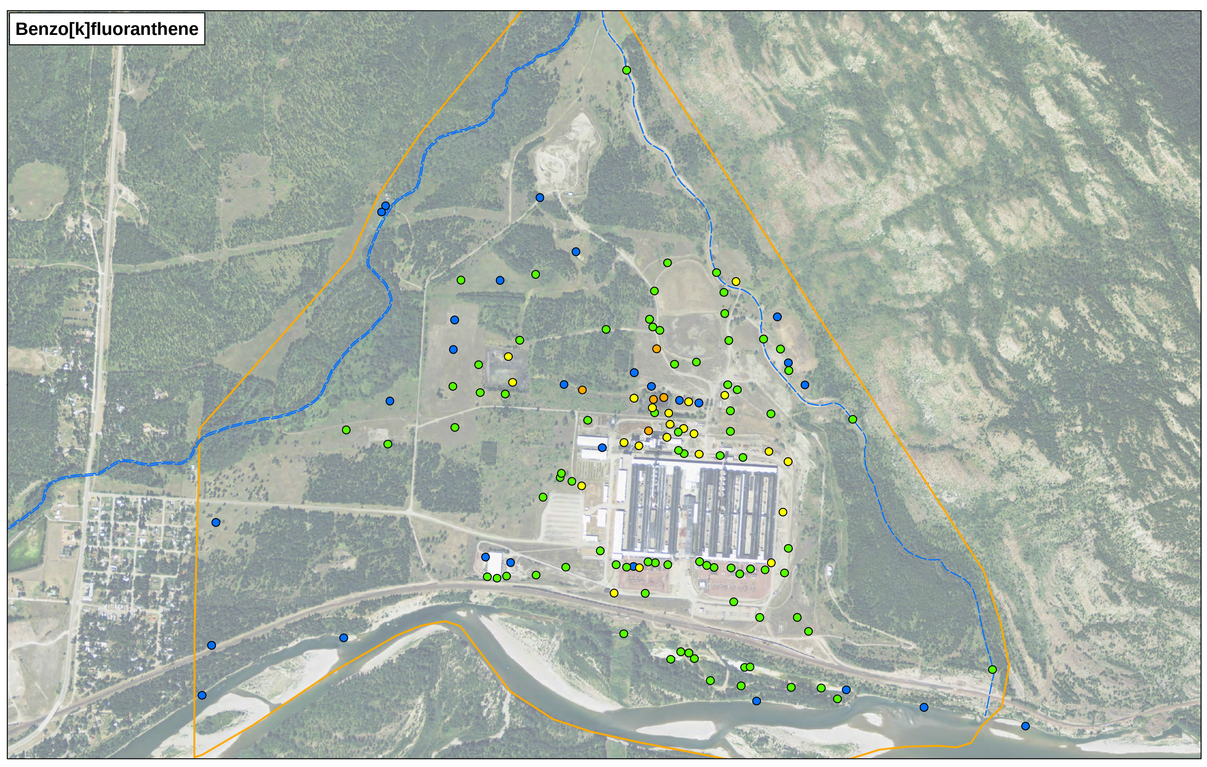
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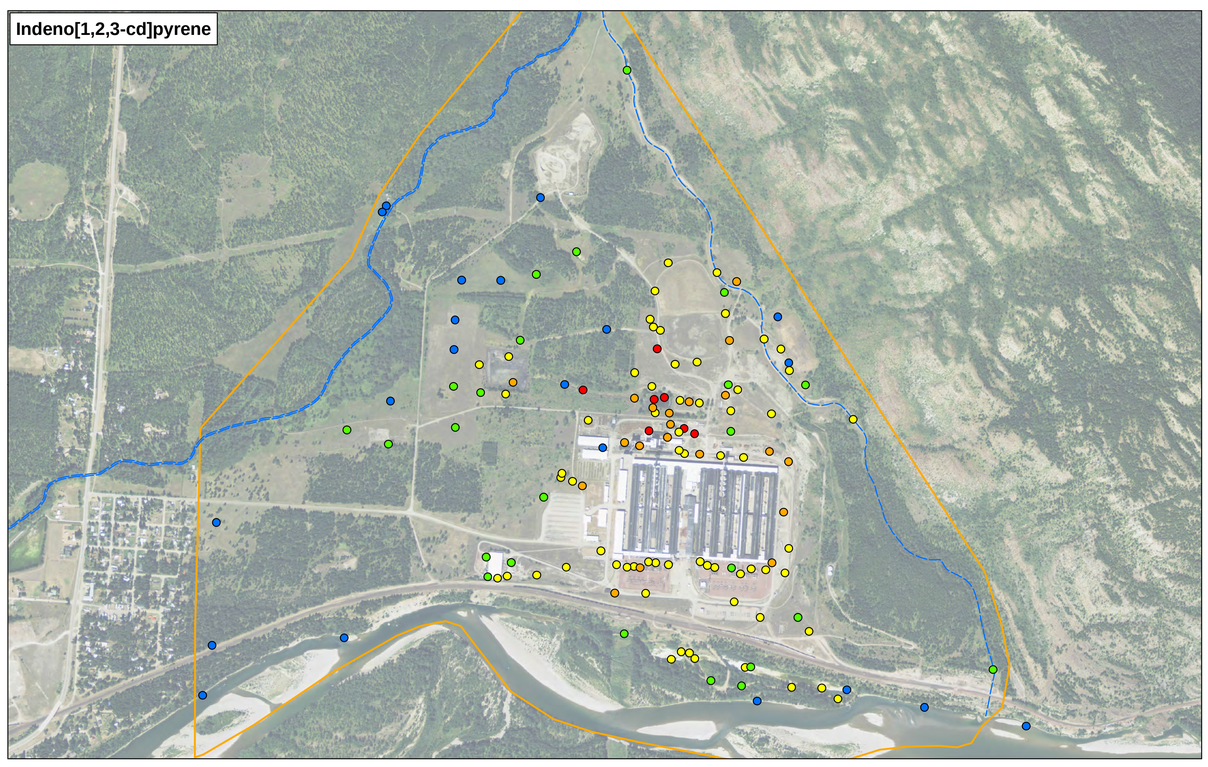












Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Benzo[a]anthracene	0.16	2.9
Benzo[a]pyrene	0.016	0.29
Benzo[B]fluoranthene	0.16	2.9
Benzo[k]fluoranthene	1.6	29
Chrysene	16	290
Dibenz(a,h)anthracene	0.016	0.29
Fluoranthene	240	3000
Indeno[1,2,3-cd]pyrene	0.16	2.9

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
PAH – Polycyclic Aromatic Hydrocarbon
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
1. All surface soil samples were collected from a 0 – 0.5 feet depth interval

N

1,750 0 1,750 Feet

Title:

CONCENTRATIONS OF SELECTED PAHS IN SURFACE SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

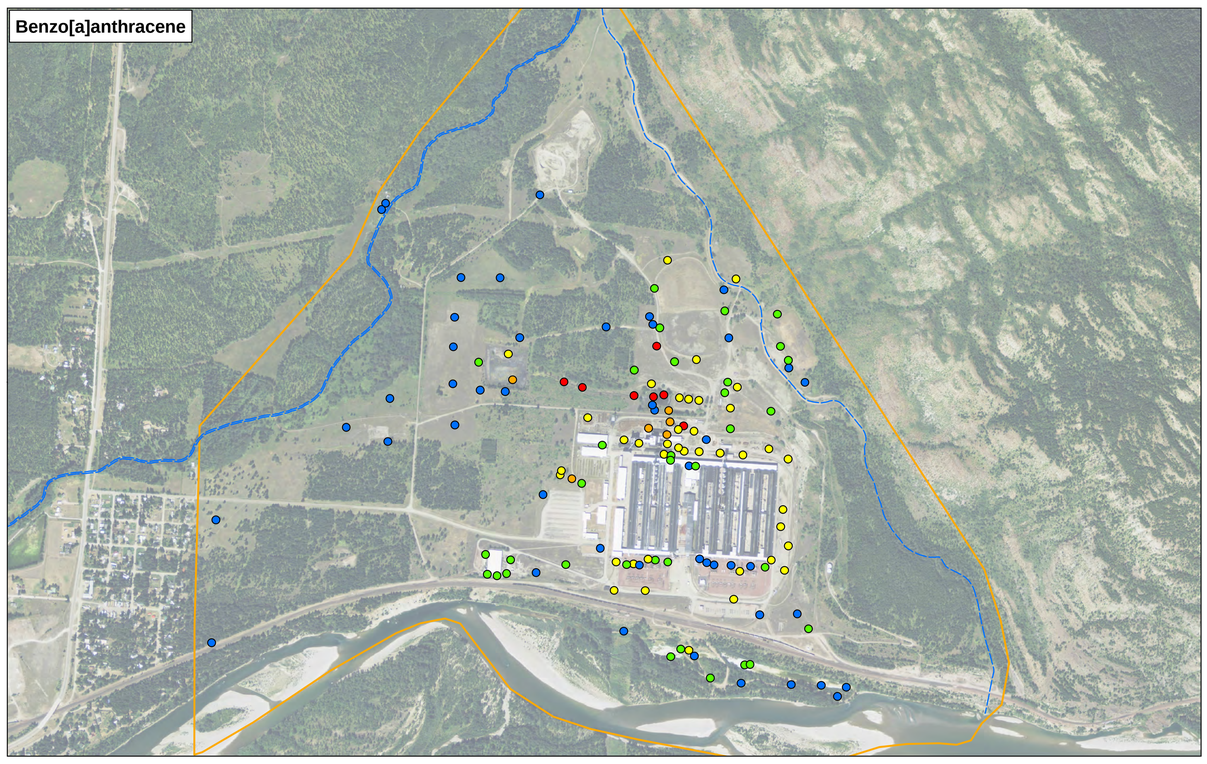
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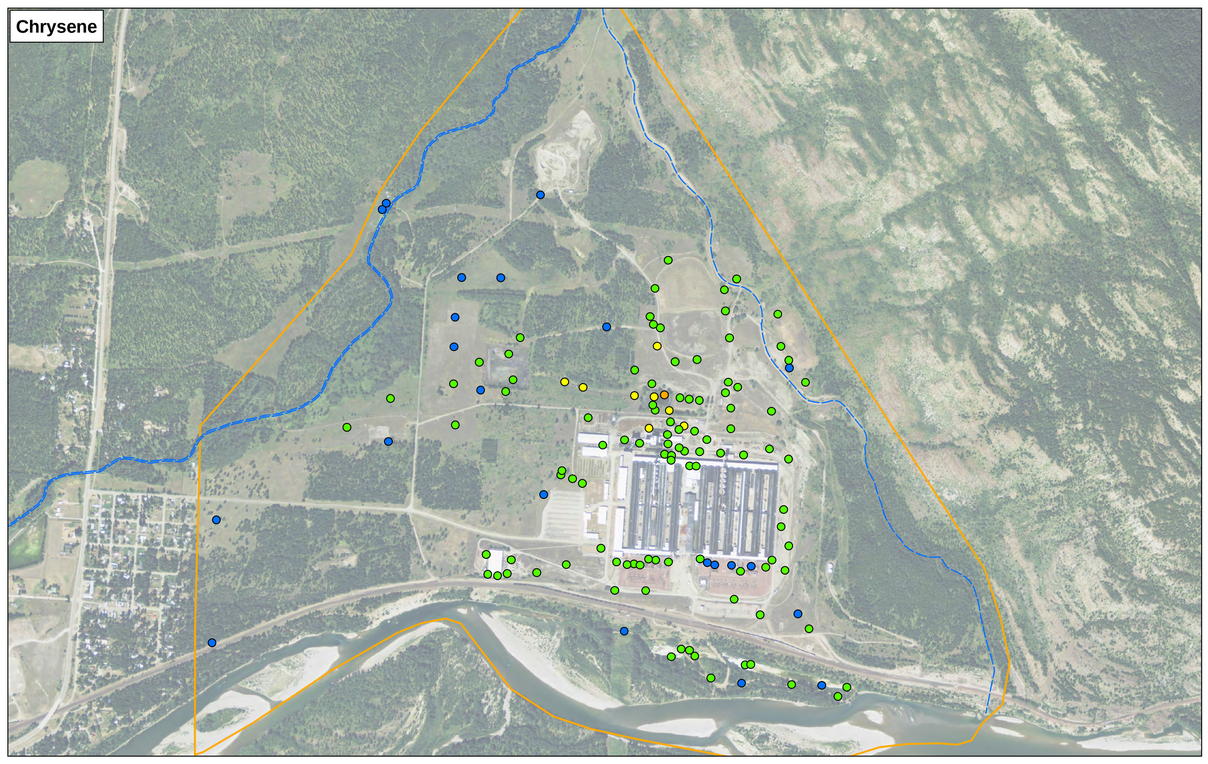
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Environmental Consulting & Management

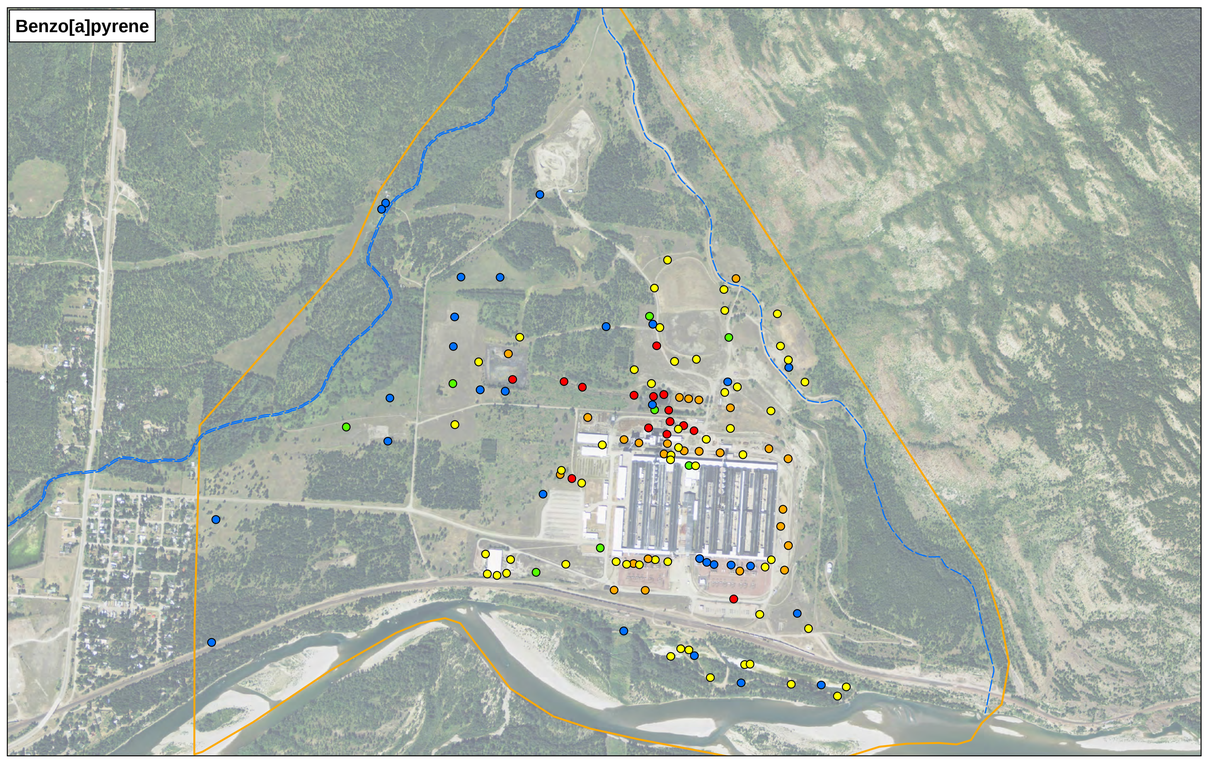
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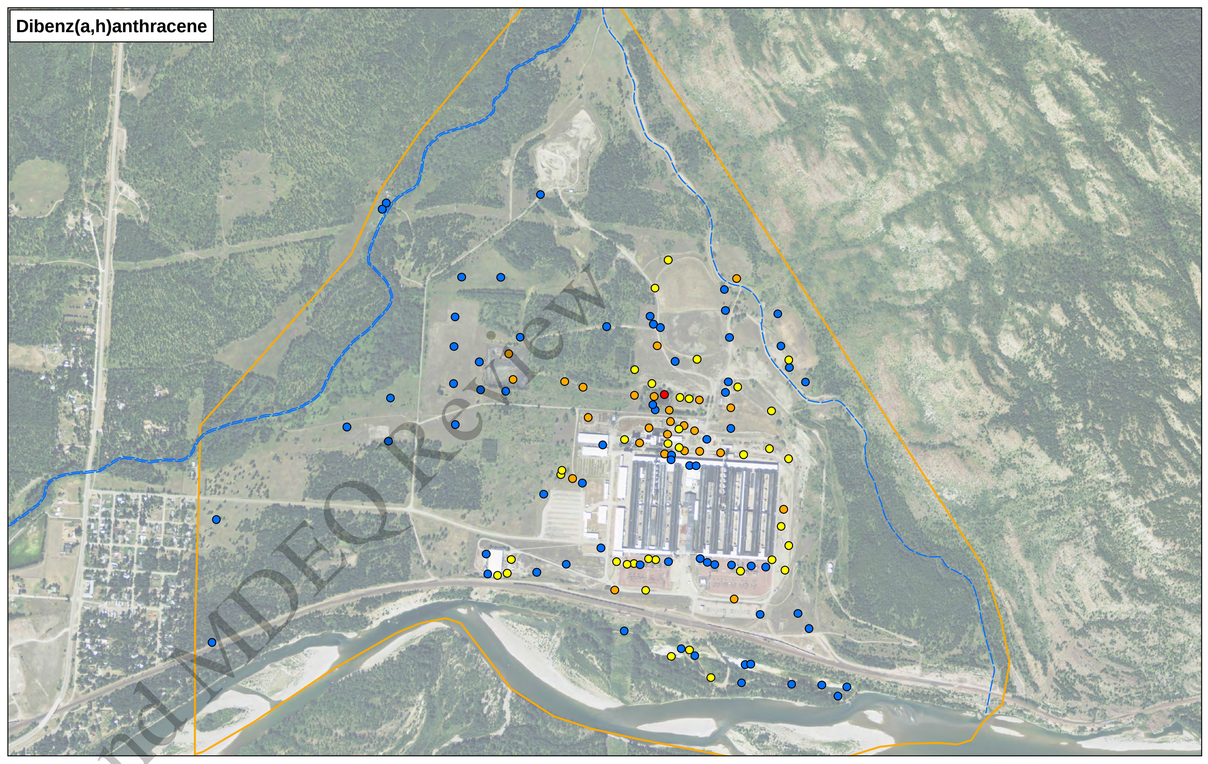
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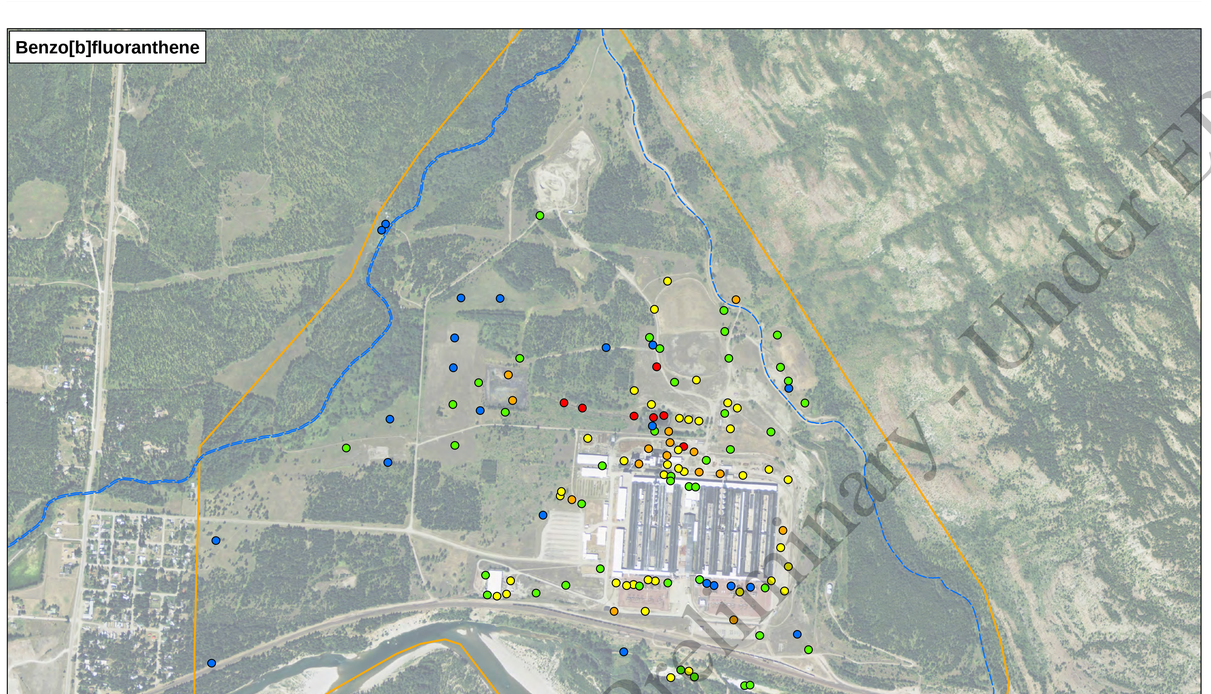
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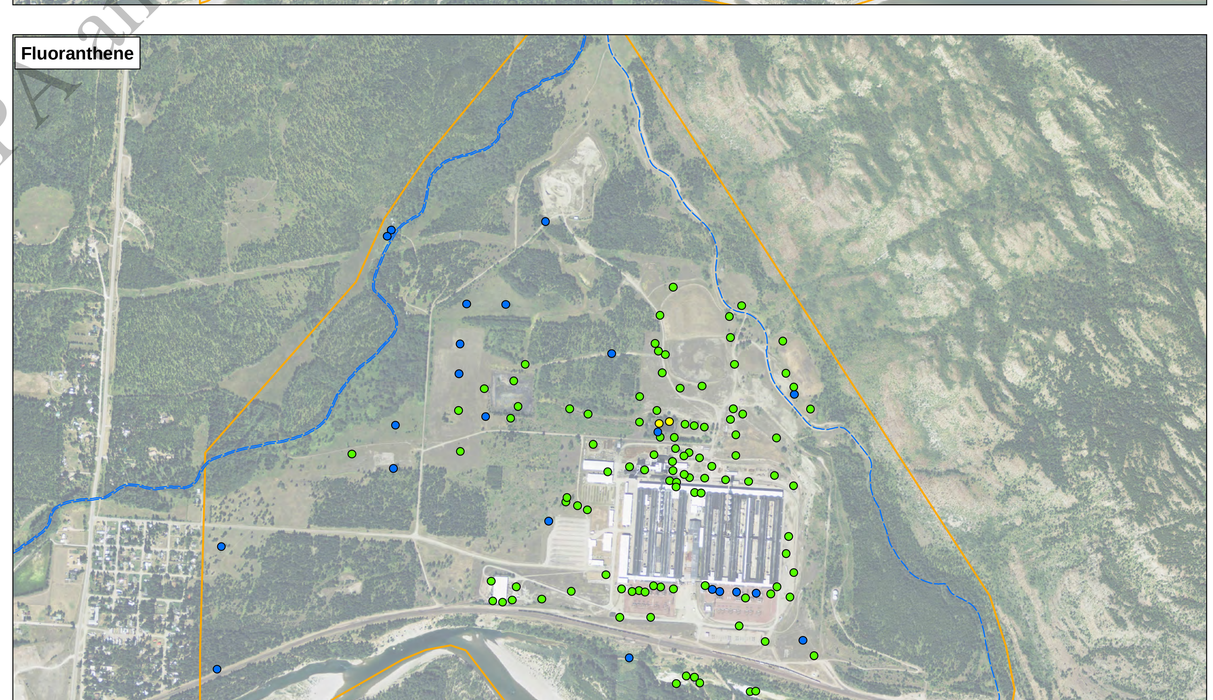












Preliminary - Under EPA and MDEQ Review

Concentration Legend

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- Exceeds EPA Industrial RSL
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Benzo[a]pyrene	0.016	0.29
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Benzo[k]fluoranthene	1.6	29
Chrysene	16	290
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Fluoranthene	240	3000
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mg/kg – Milligrams/Kilograms
1. All shallow soil samples were collected from a 0.5 – 2 feet depth interval

N

1,750 0 1,750 Feet

Title:
CONCENTRATIONS OF SELECTED PAHS IN SHALLOW SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

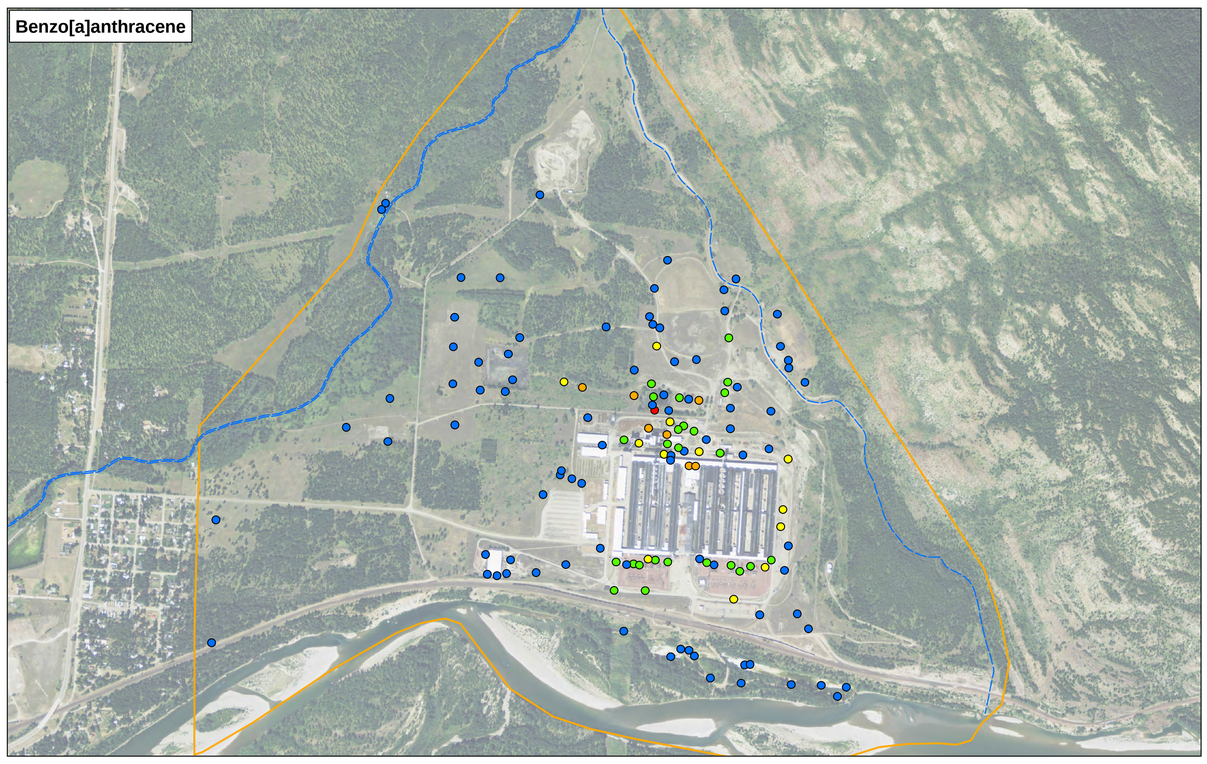
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

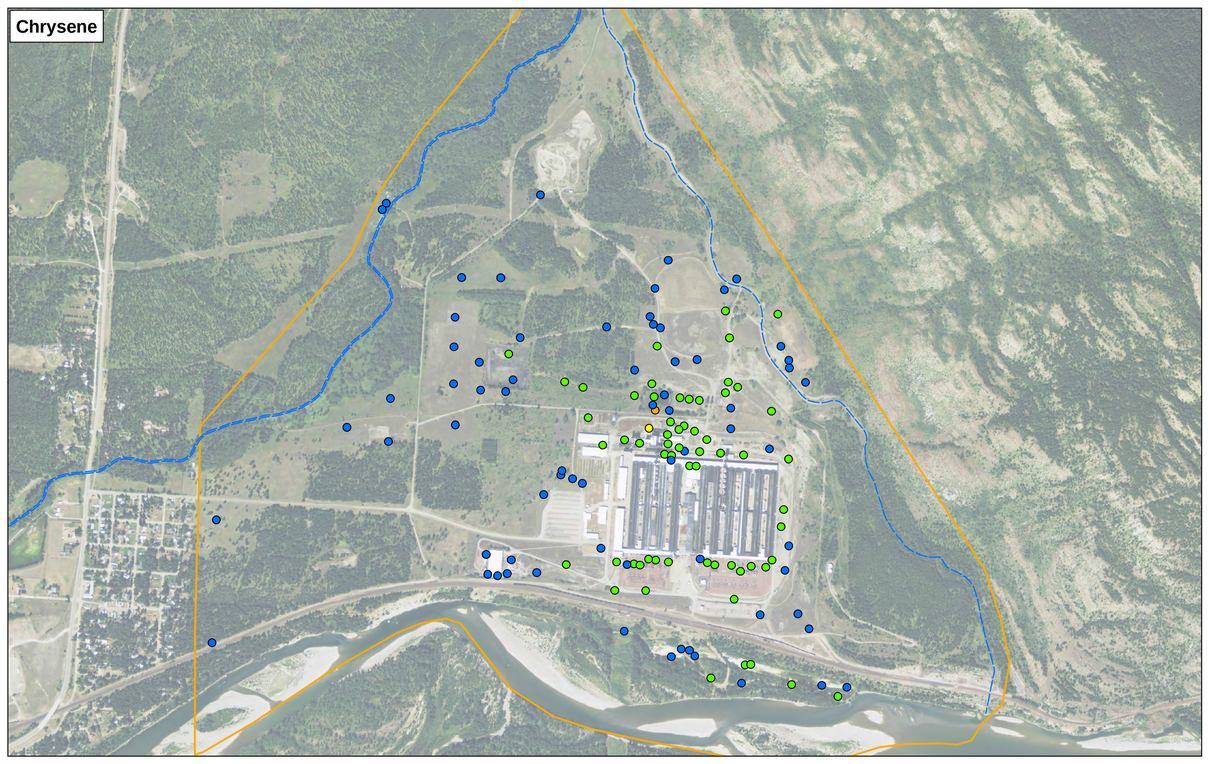
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

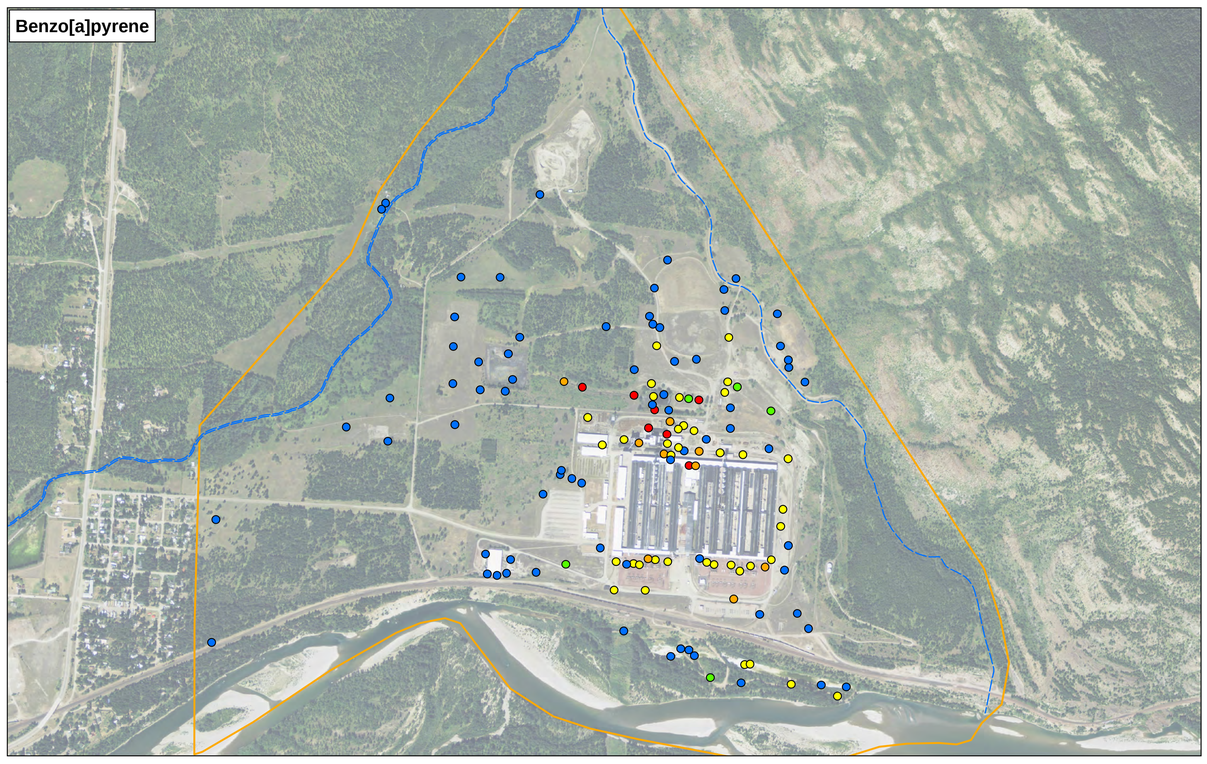
Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.7	

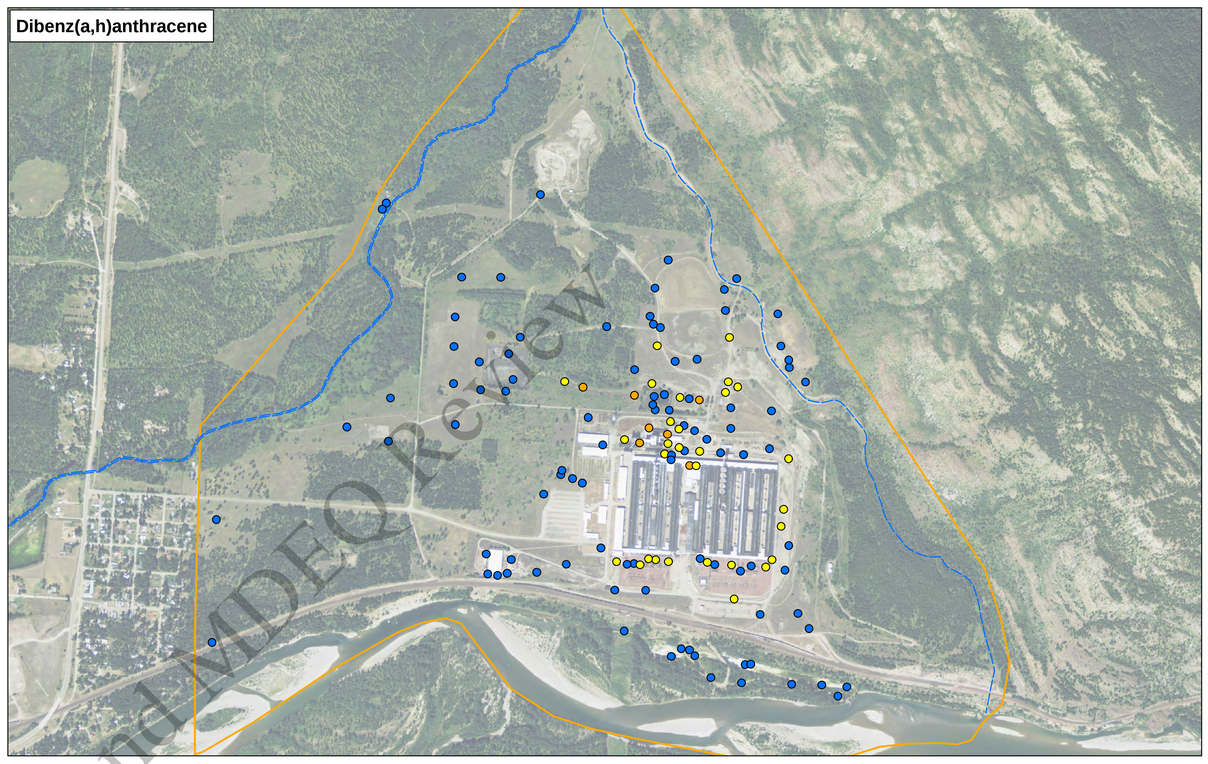
PLATE N3

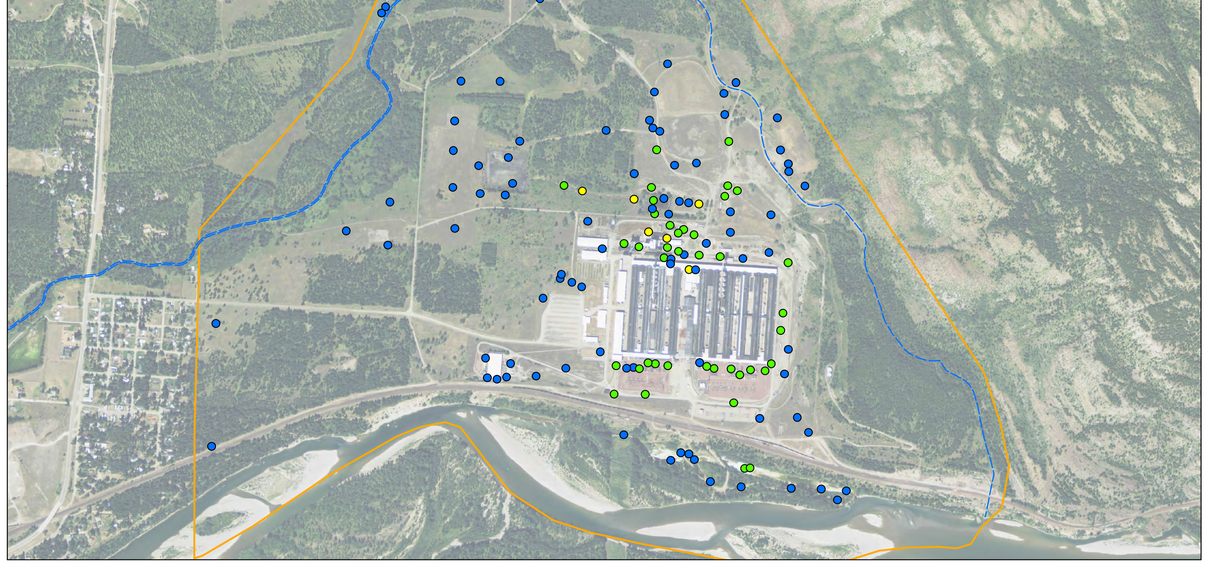
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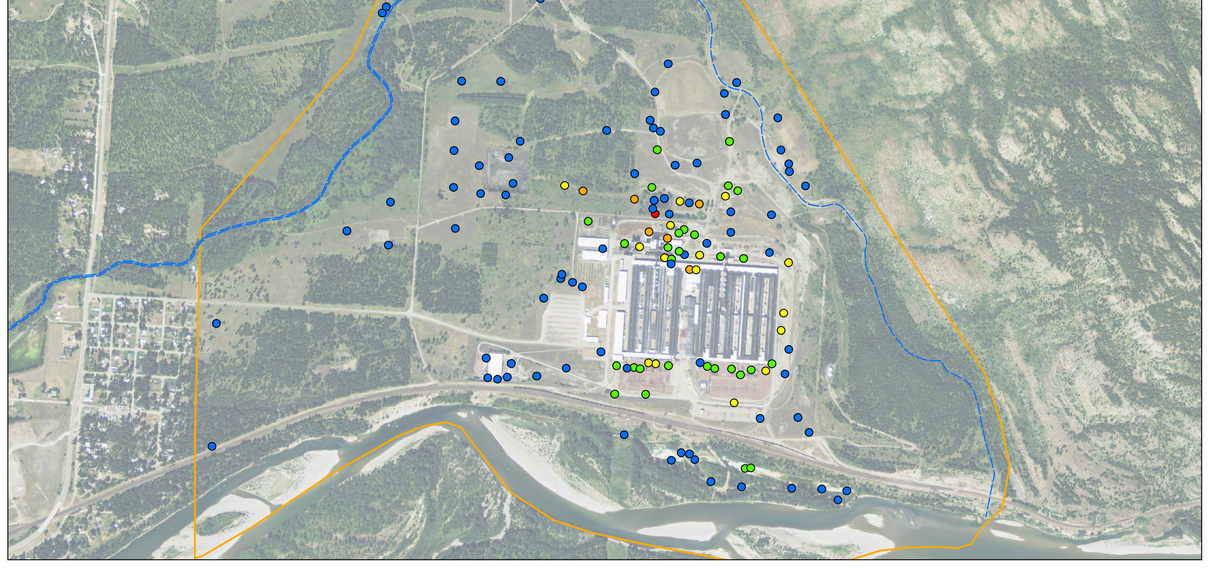












Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Benzo[a]anthracene	0.16	2.9
Benzo[a]pyrene	0.016	0.29
Benzo[B]fluoranthene	0.16	2.9
Benzo[k]fluoranthene	1.6	29
Chrysene	16	290
Dibenz(a,h)anthracene	0.016	0.29
Fluoranthene	240	3000
Indeno[1,2,3-cd]pyrene	0.16	2.9

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
PAH – Polycyclic Aromatic Hydrocarbon
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
1. All intermediate–depth soil samples were typically collected from a 10 – 12 feet depth interval

N

1,750 0 1,750 Feet

Title:

CONCENTRATIONS OF SELECTED PAHS IN INTERMEDIATE-DEPTH SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

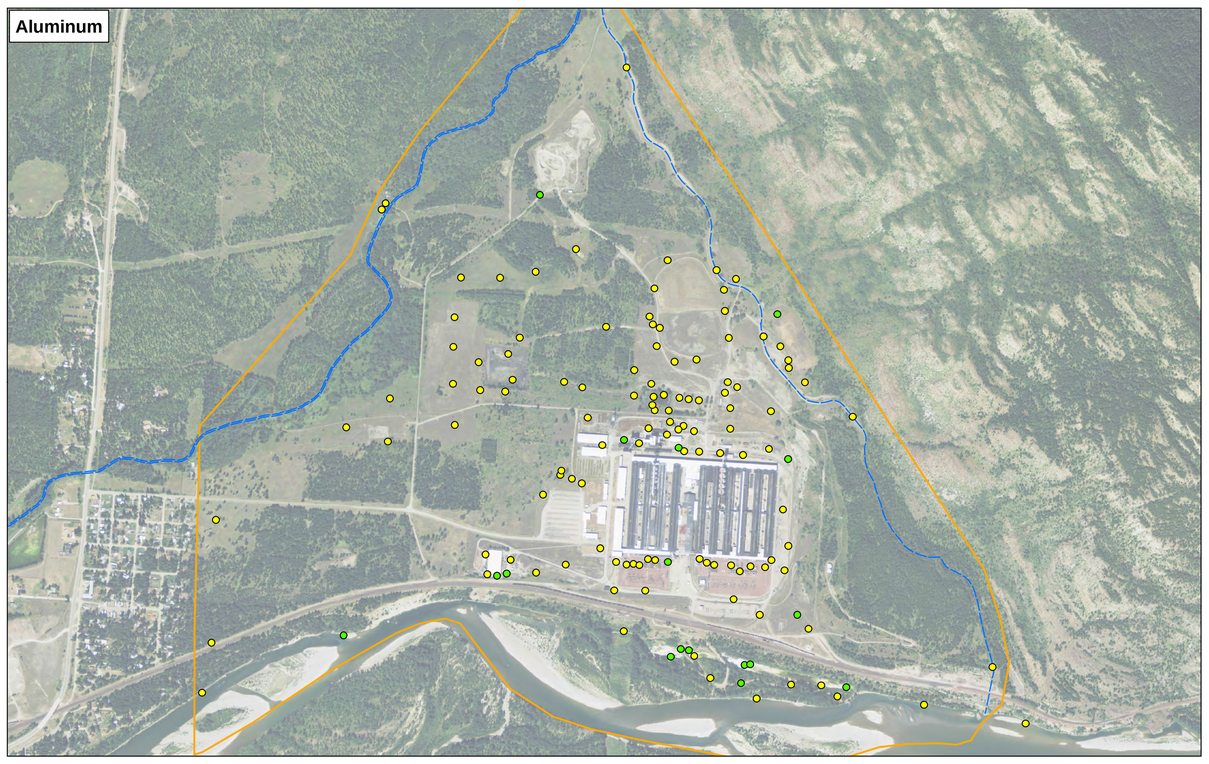
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 22FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.8	

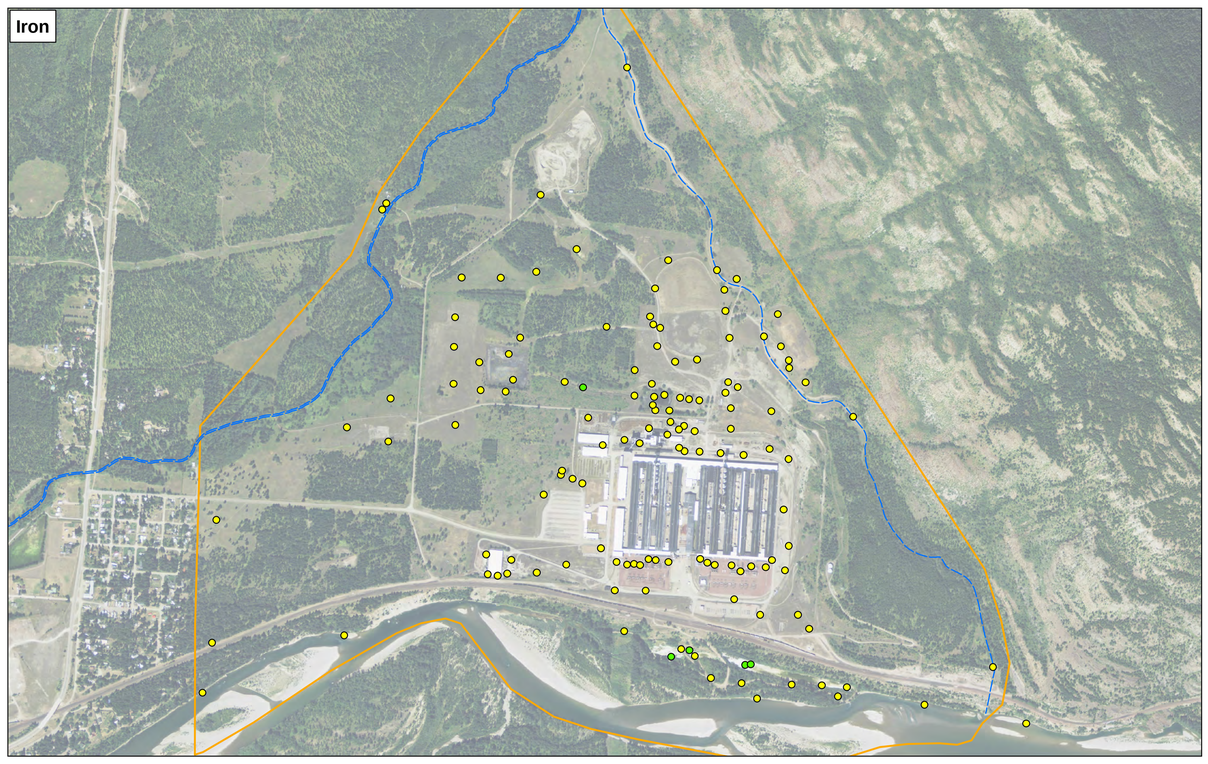
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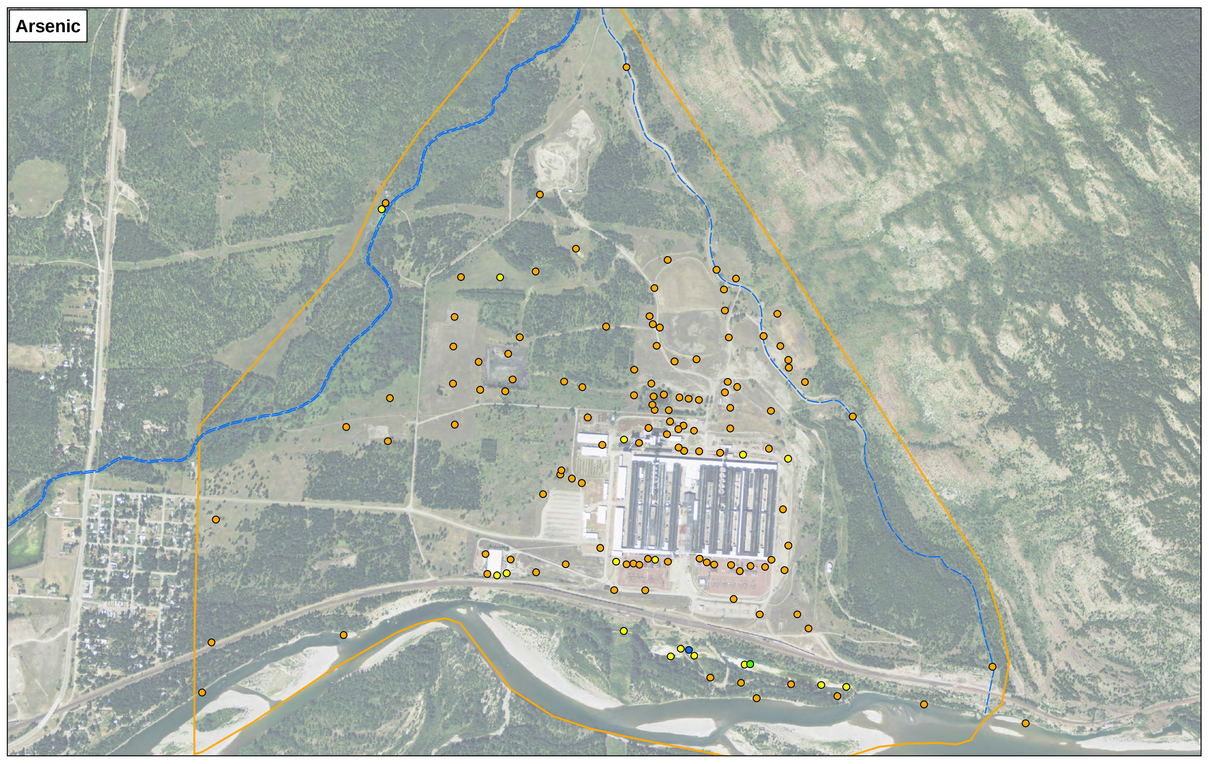
Aluminum



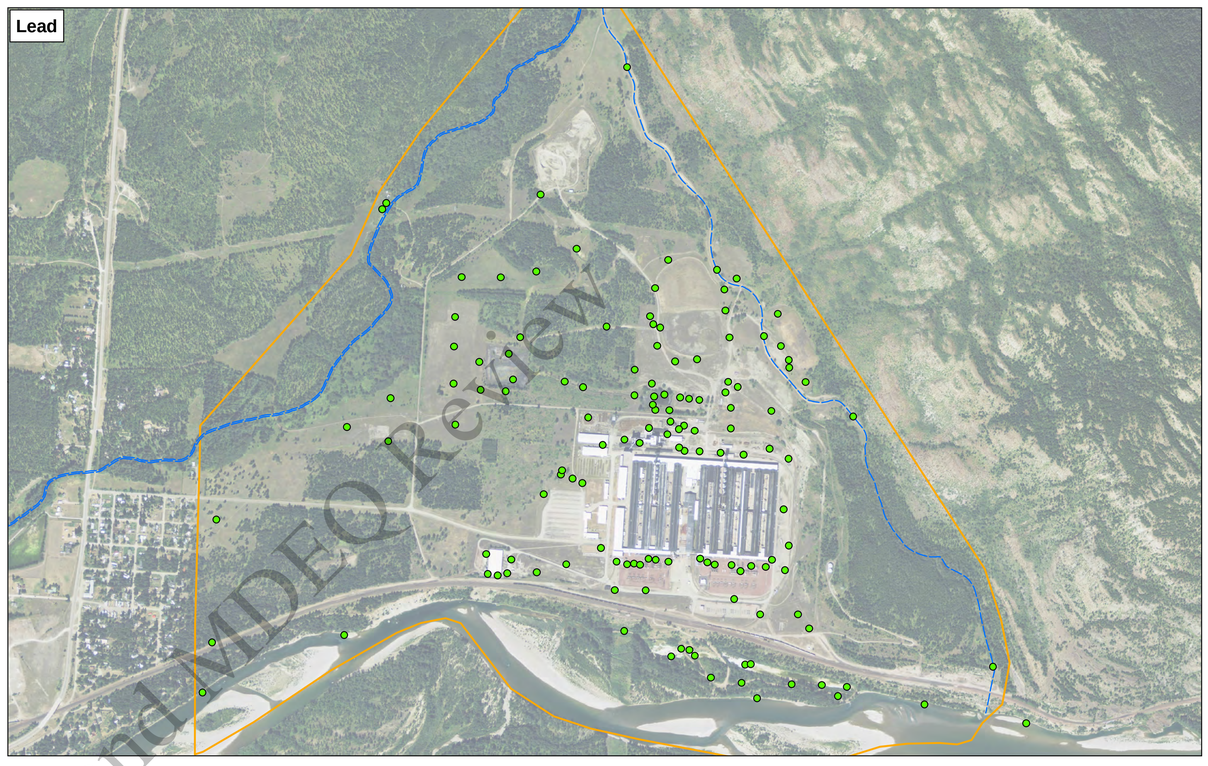
Iron



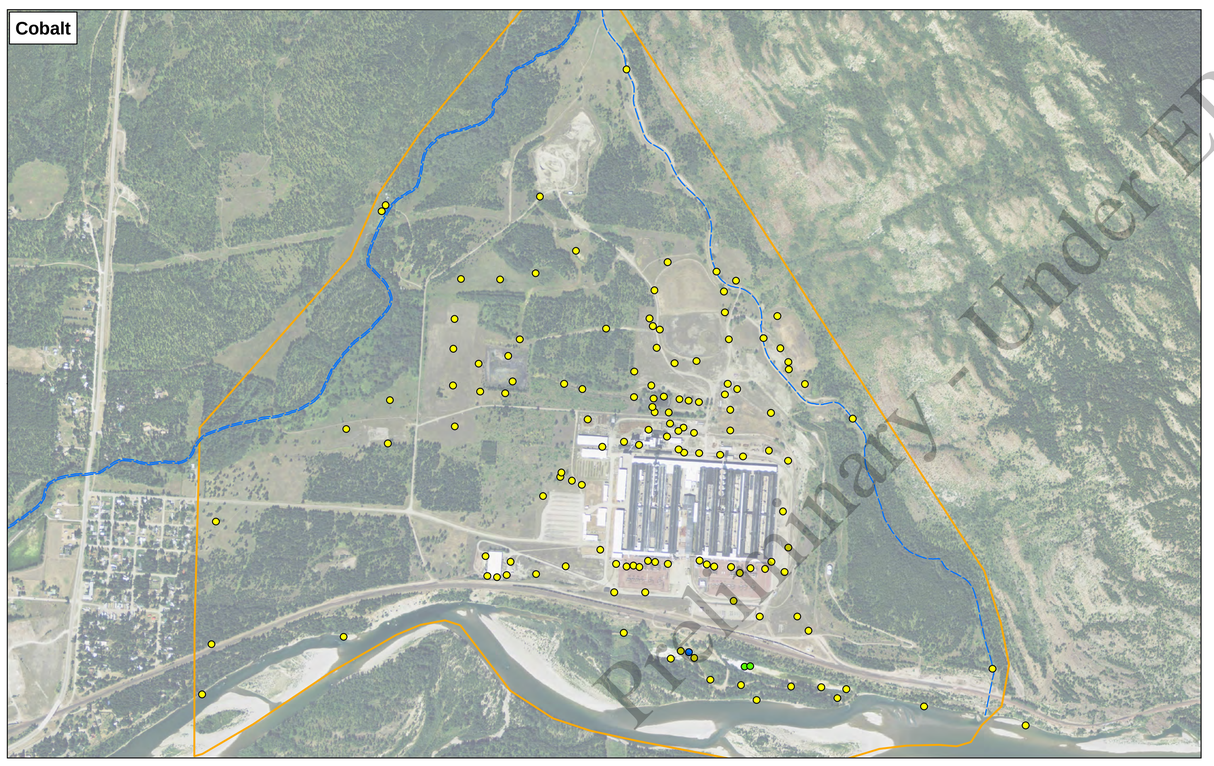
Arsenic



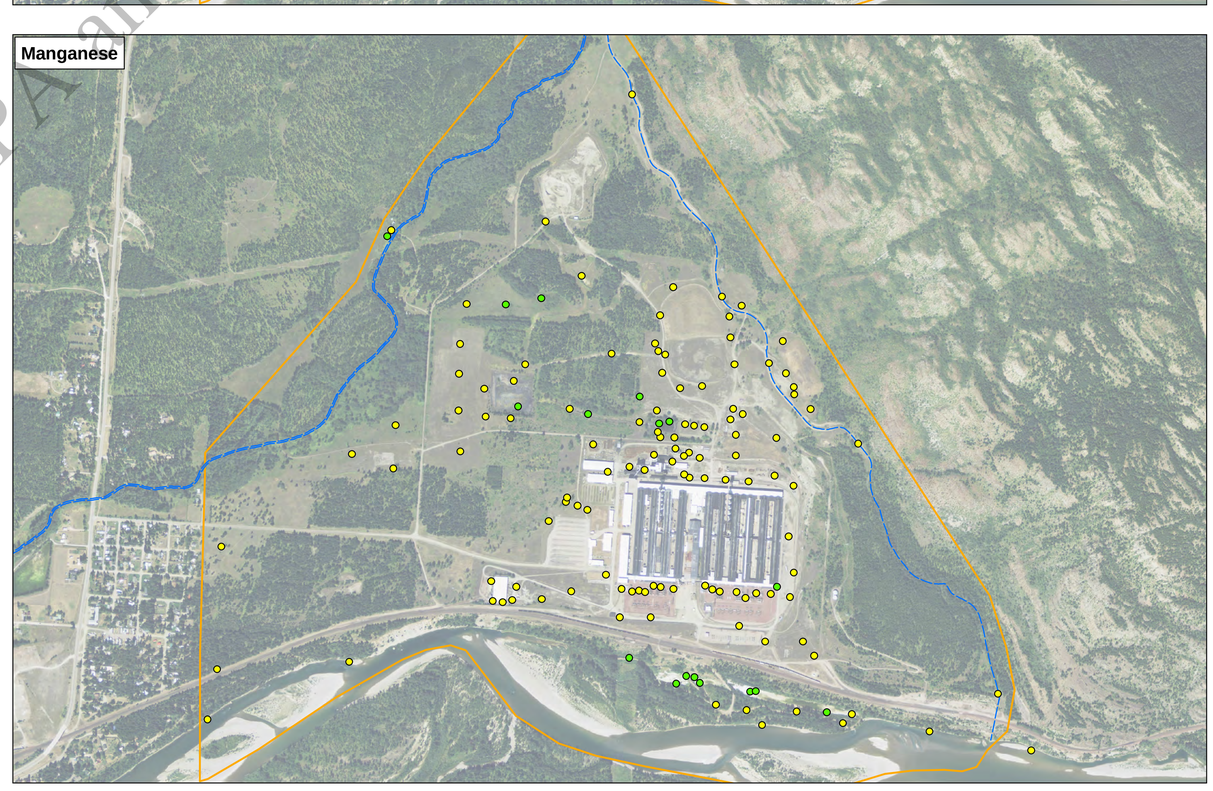
Lead



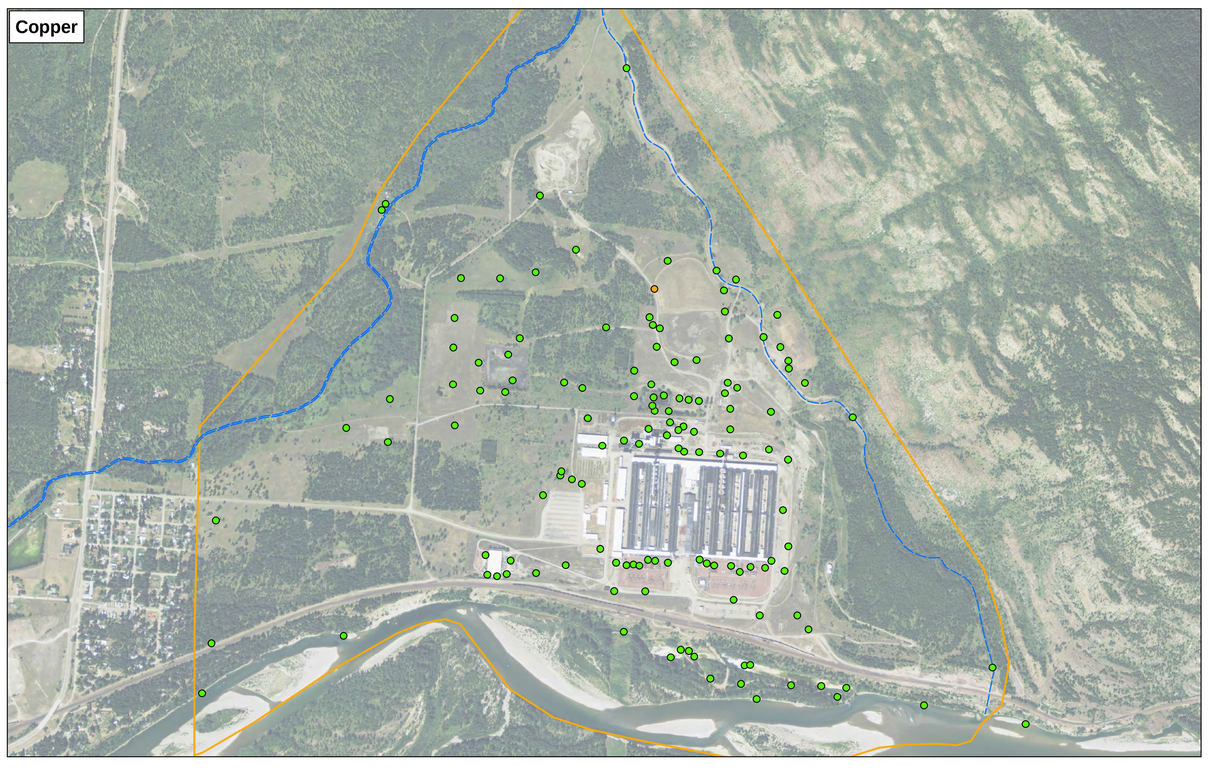
Cobalt



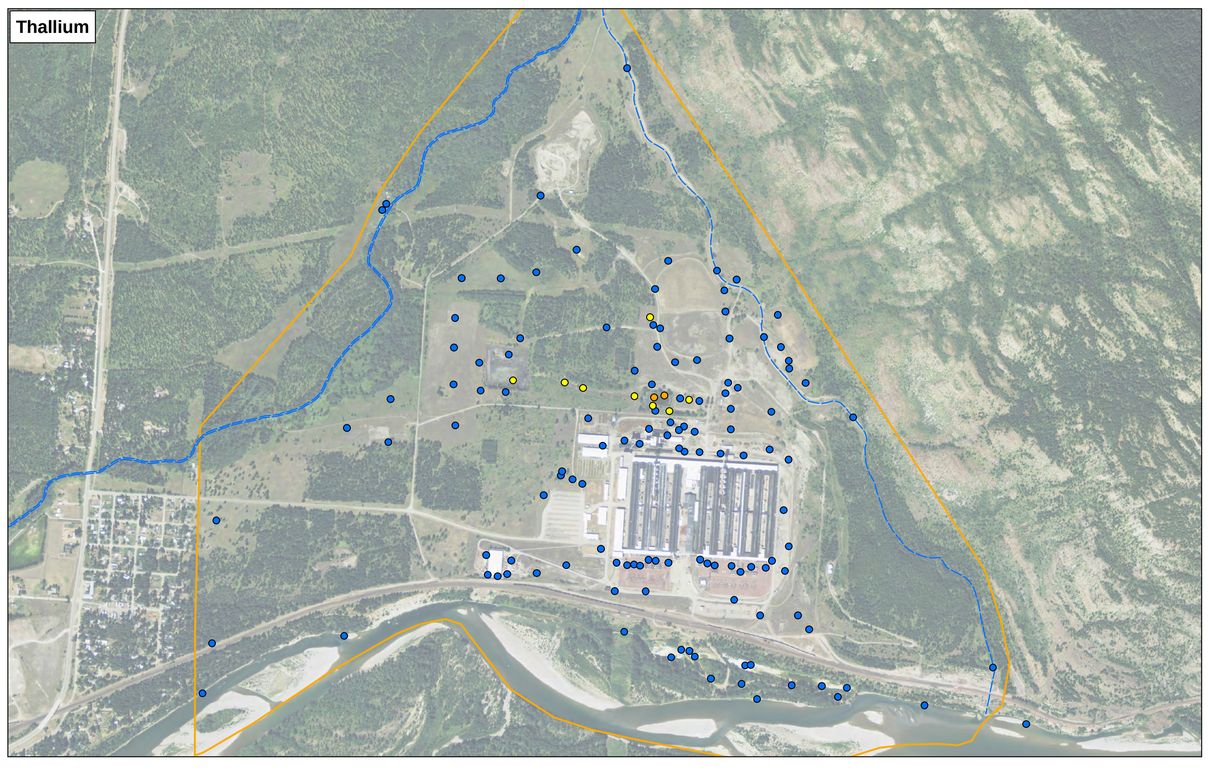
Manganese



Copper



Thallium



Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Compound	Residential* mg/kg	Industrial** mg/kg
Aluminum	7700	110000
Arsenic	0.68	3
Cobalt	2.3	35
Copper	310	4700
Iron	5500	82000
Lead	400	800
Manganese	180	2600
Thallium	0.078	1.2

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
1. All surface soil samples were collected from a 0 – 0.5 feet depth interval

N

1,750 0 1,750 Feet

Title:

CONCENTRATIONS OF SELECTED METALS IN SURFACE SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

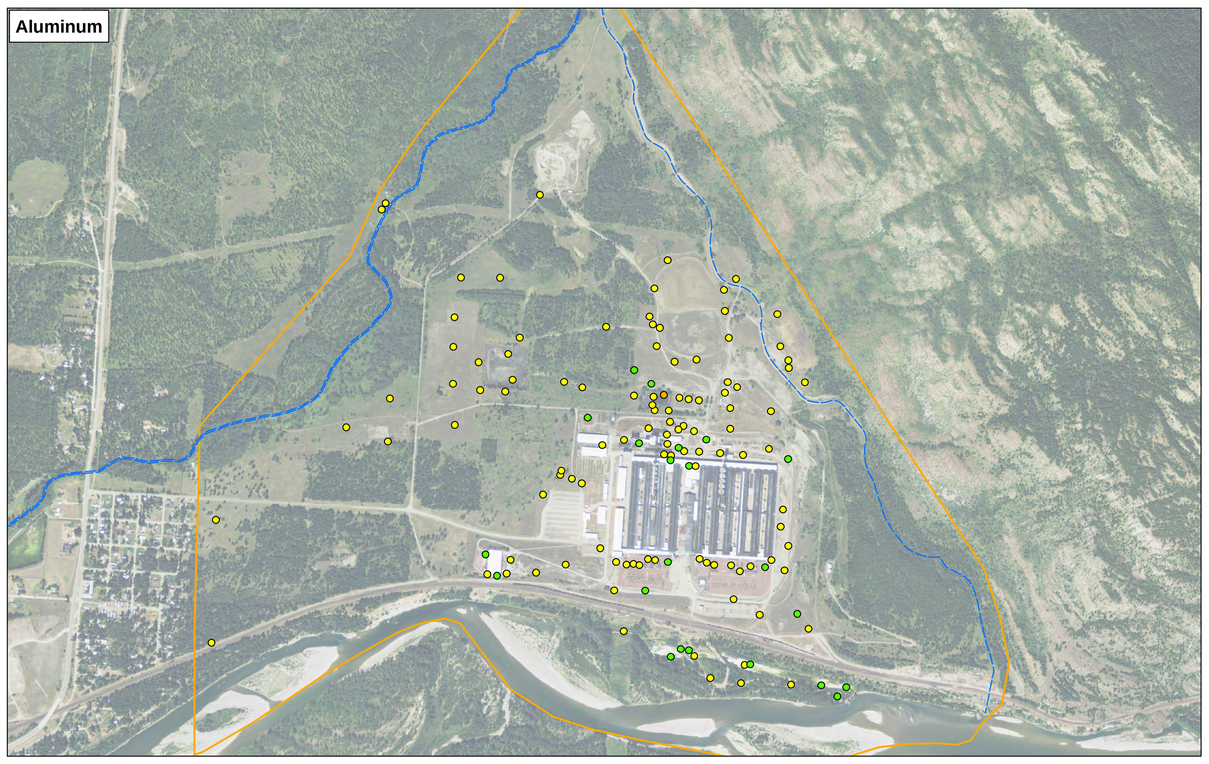
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.9	

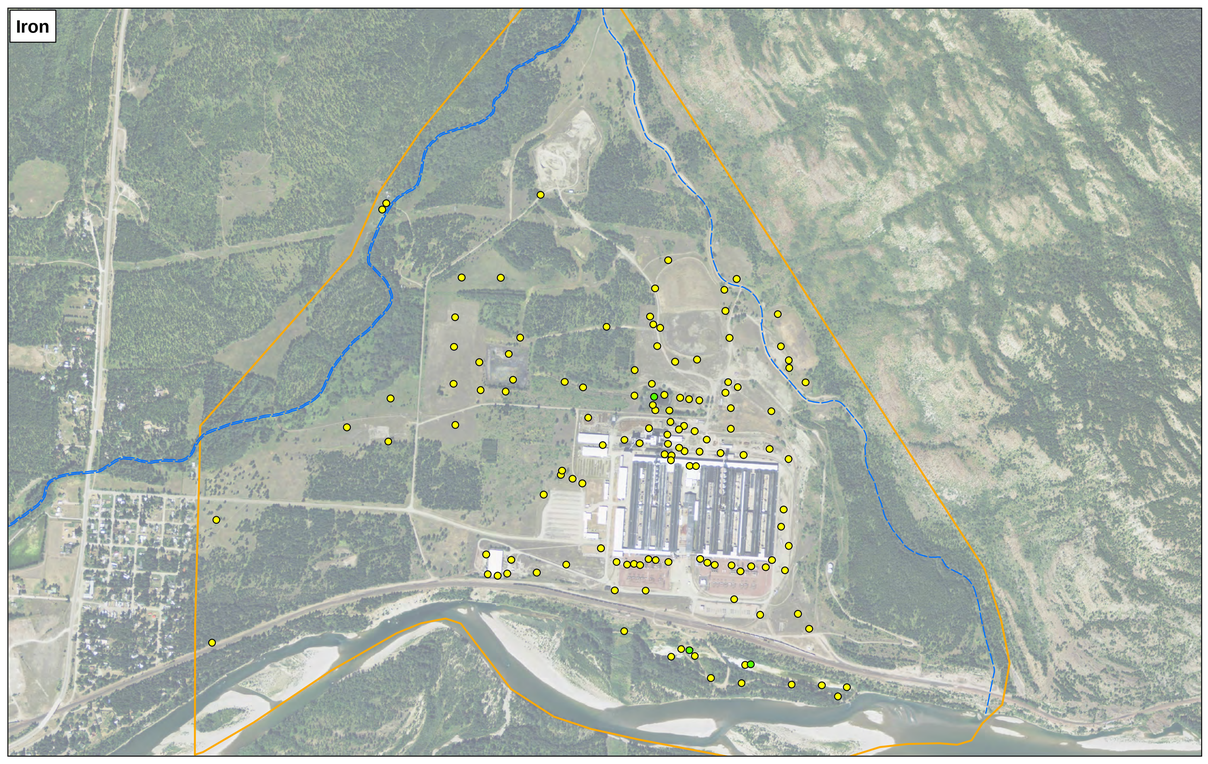
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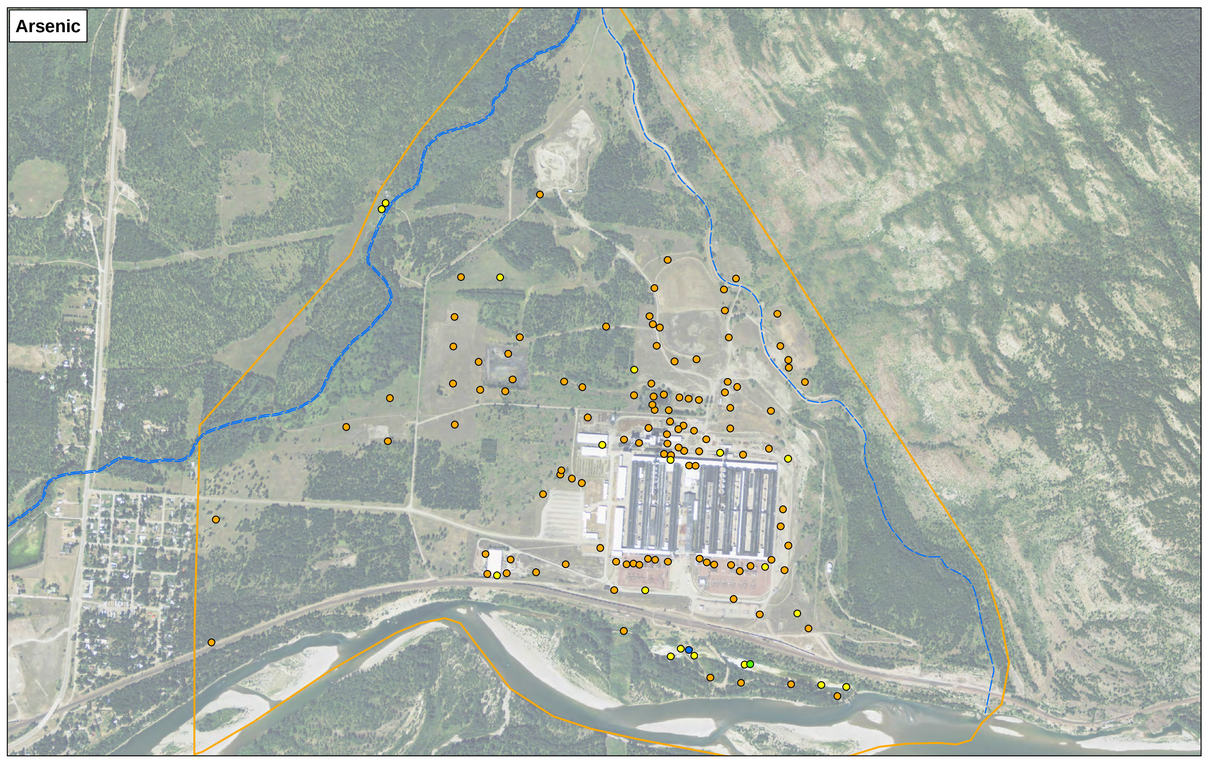
Aluminum



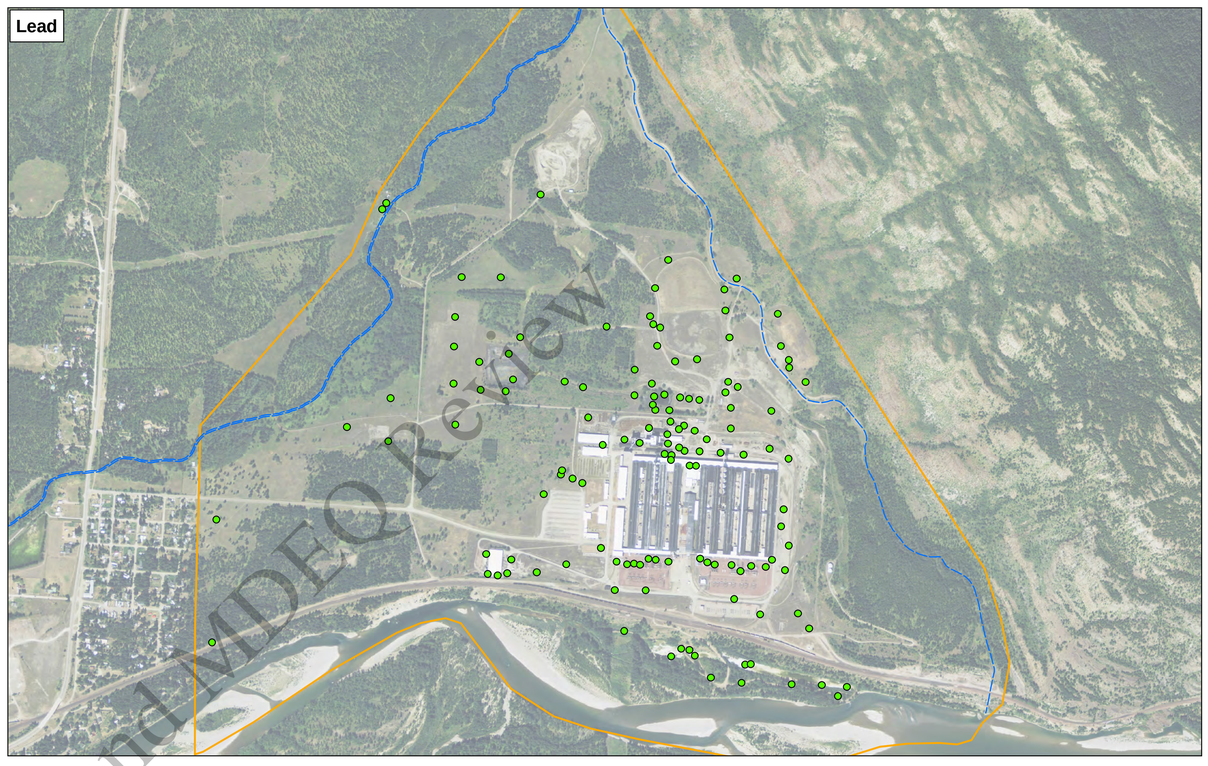
Iron



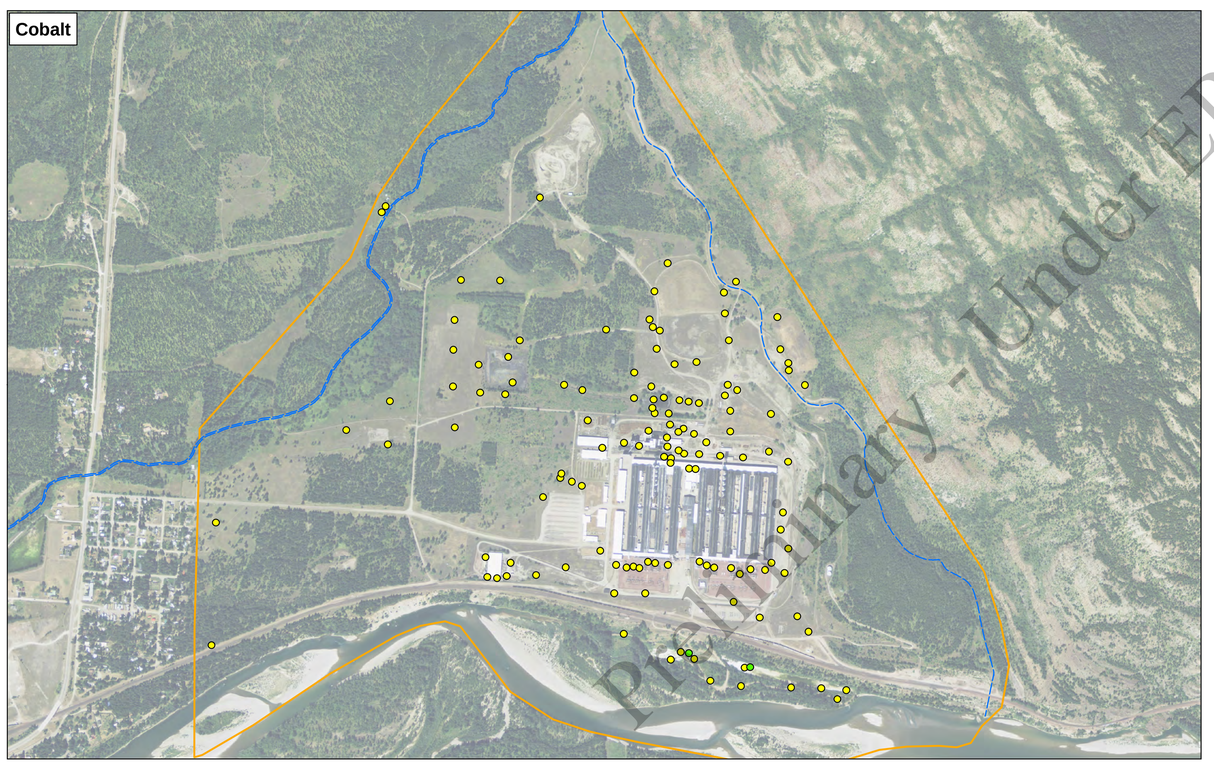
Arsenic



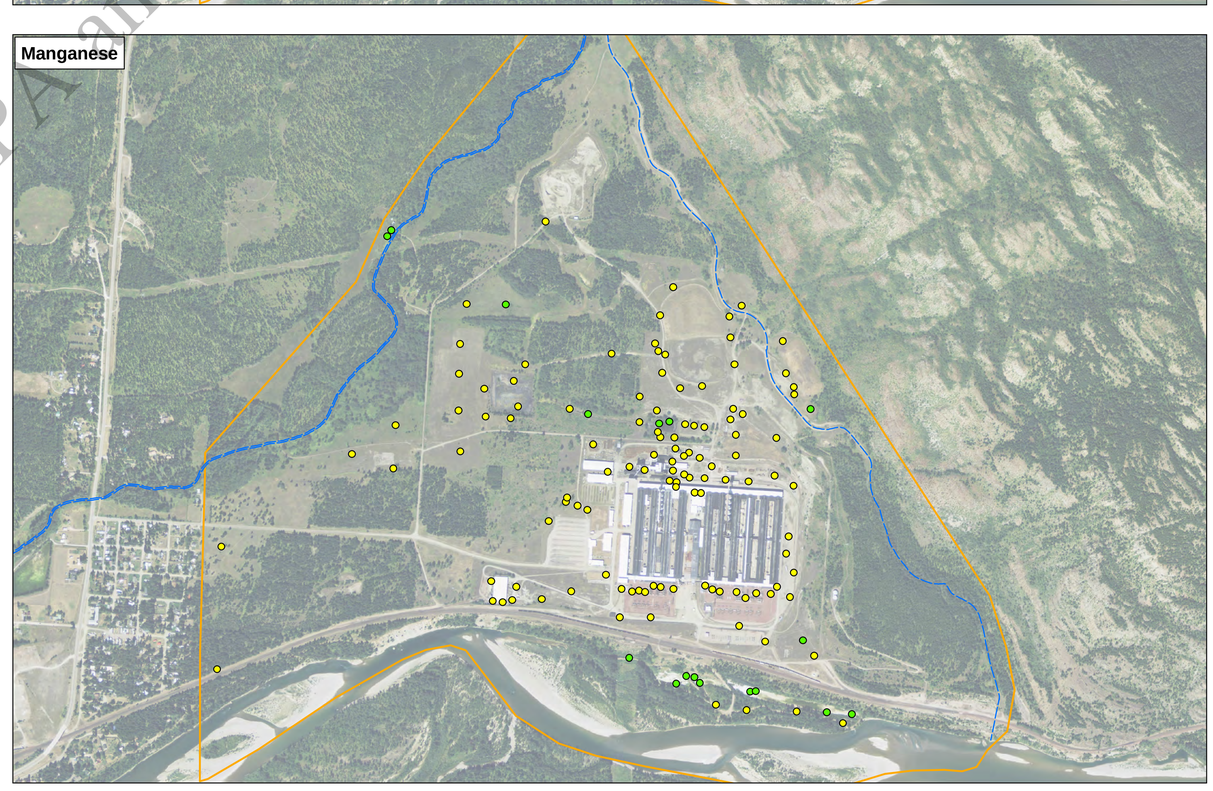
Lead



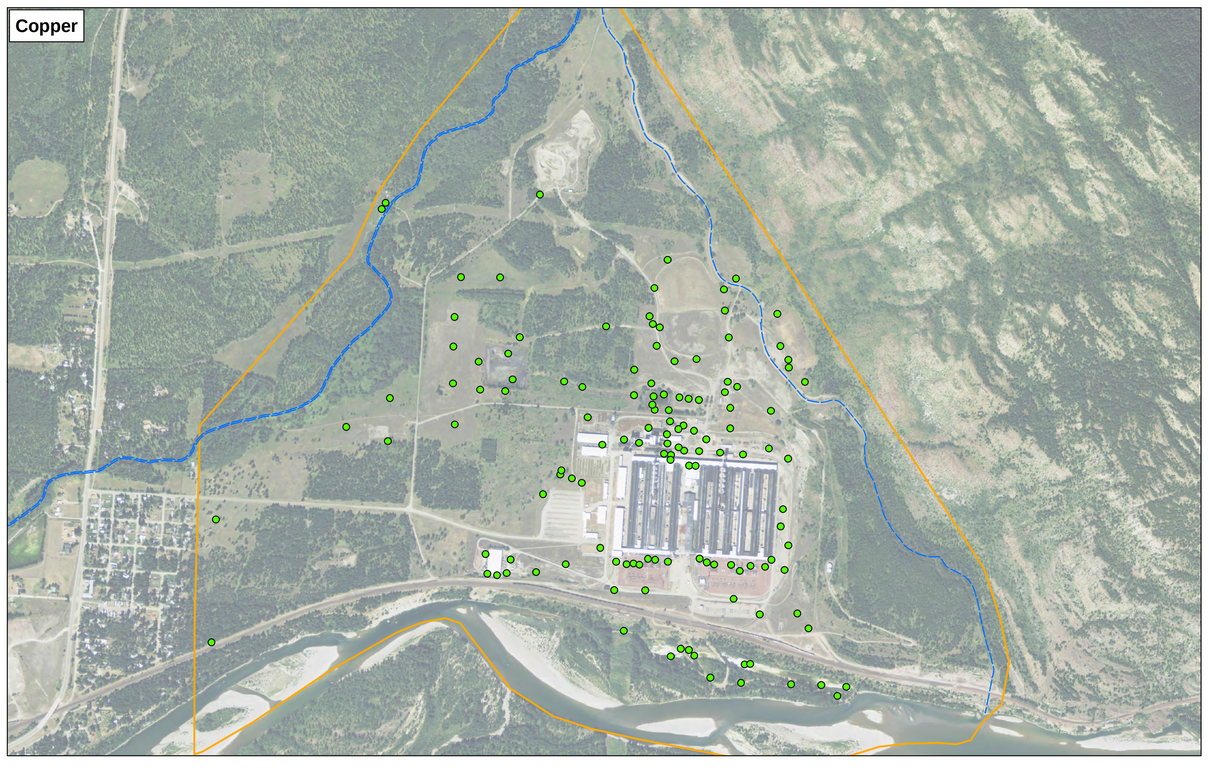
Cobalt



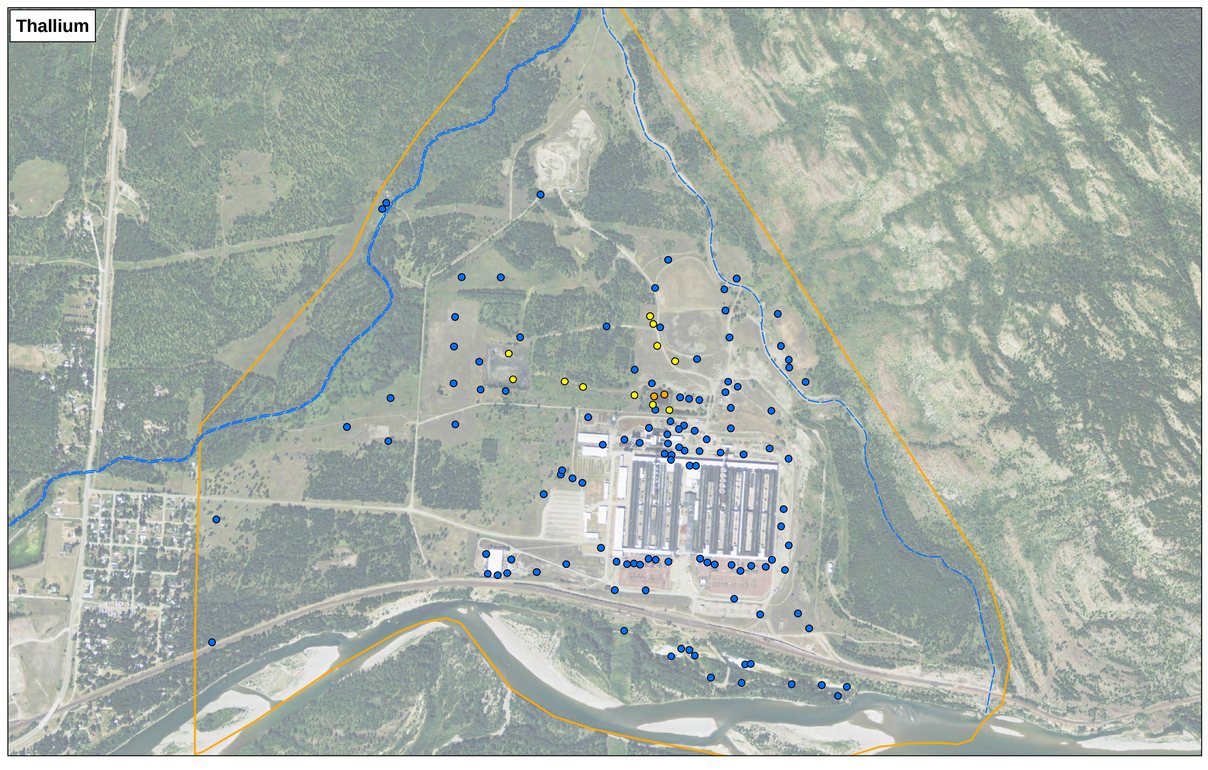
Manganese



Copper



Thallium



Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Compound	Residential* mg/kg	Industrial** mg/kg
Aluminum	7700	110000
Arsenic	0.68	3
Cobalt	2.3	35
Copper	310	4700
Iron	5500	82000
Lead	400	800
Manganese	180	2600
Thallium	0.078	1.2

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
1. All shallow soil samples were collected from a 0.5 – 2 feet depth interval

N

1,750 0 1,750 Feet

Title:

CONCENTRATIONS OF SELECTED METALS IN SHALLOW SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

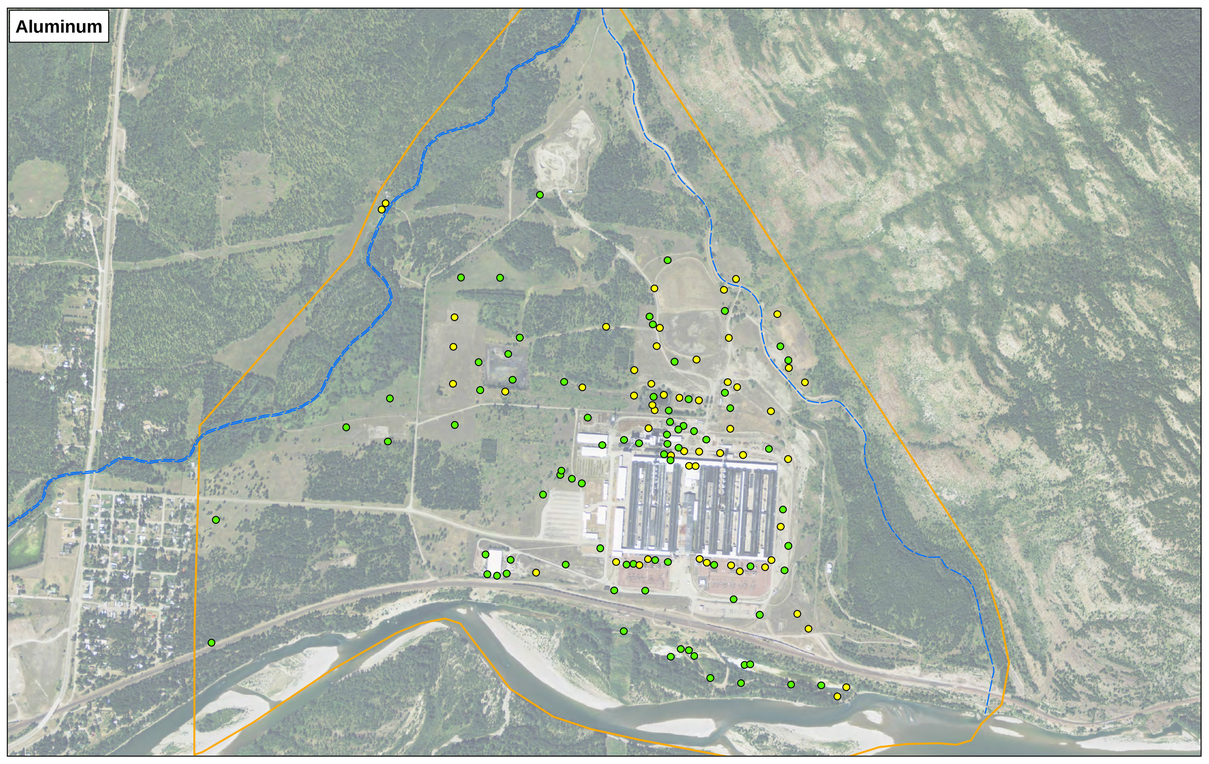
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.10	

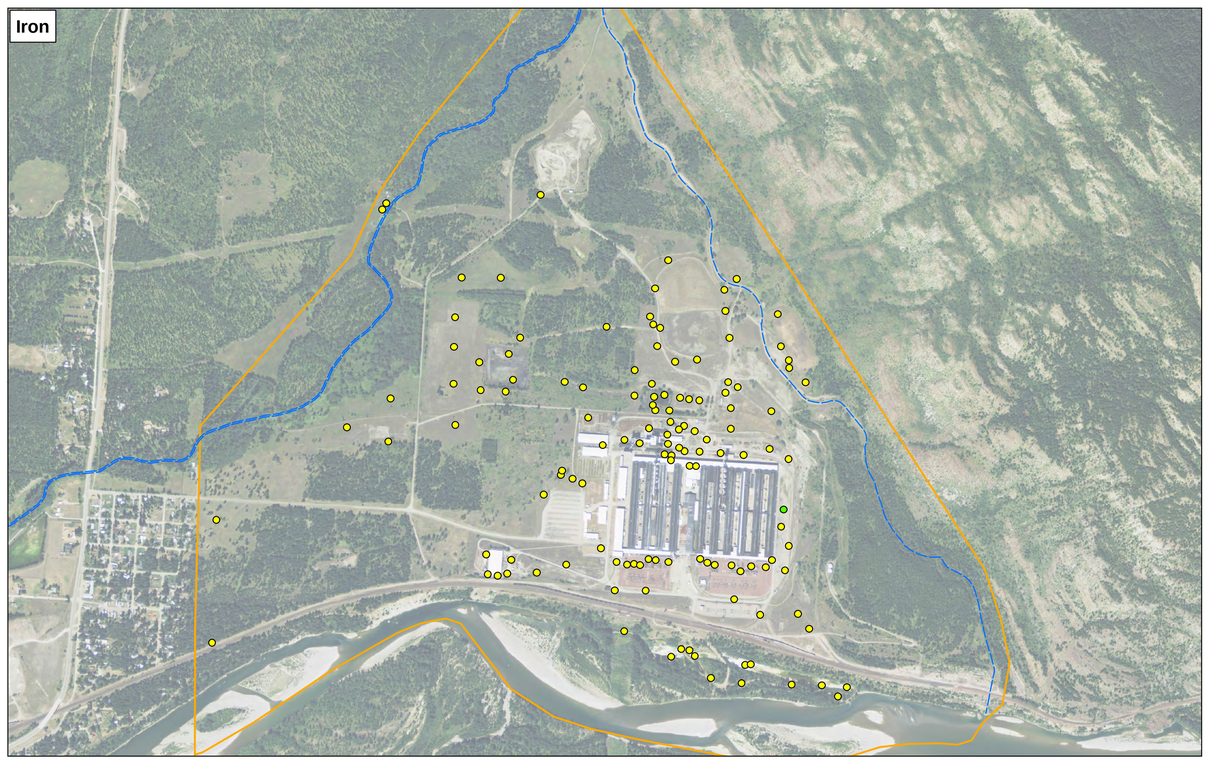
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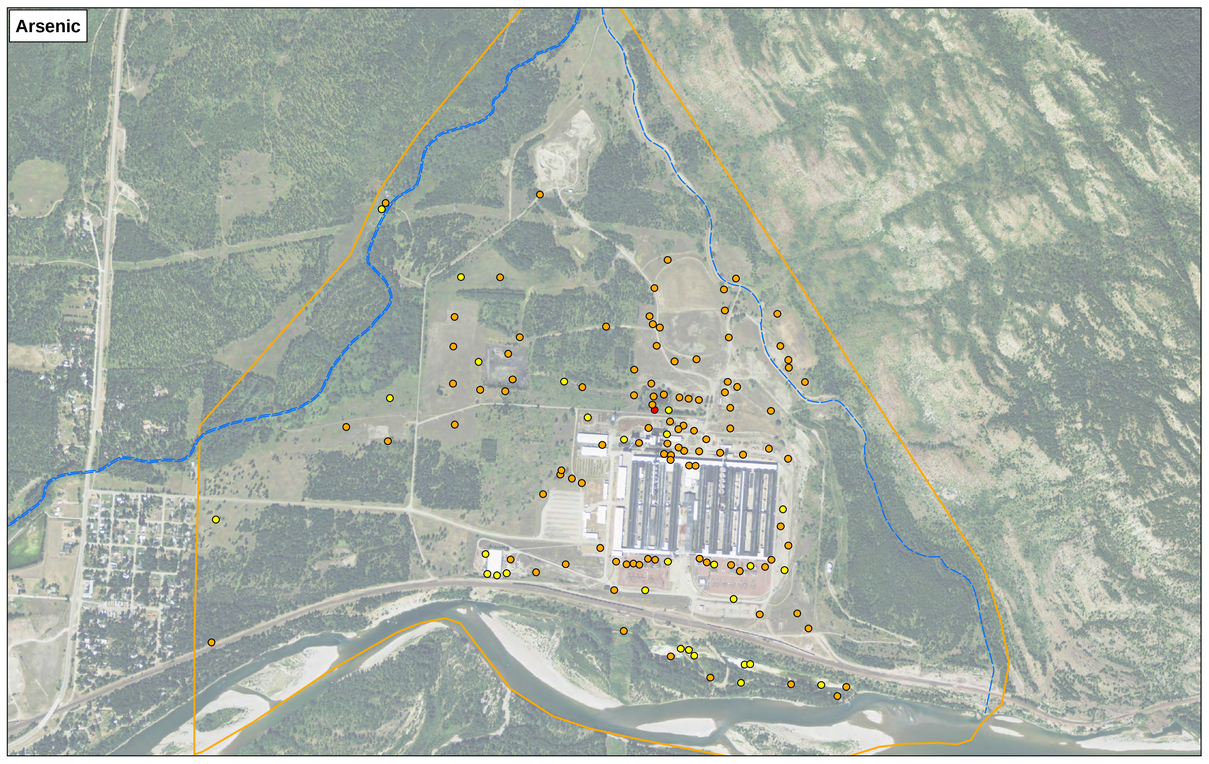
Aluminum



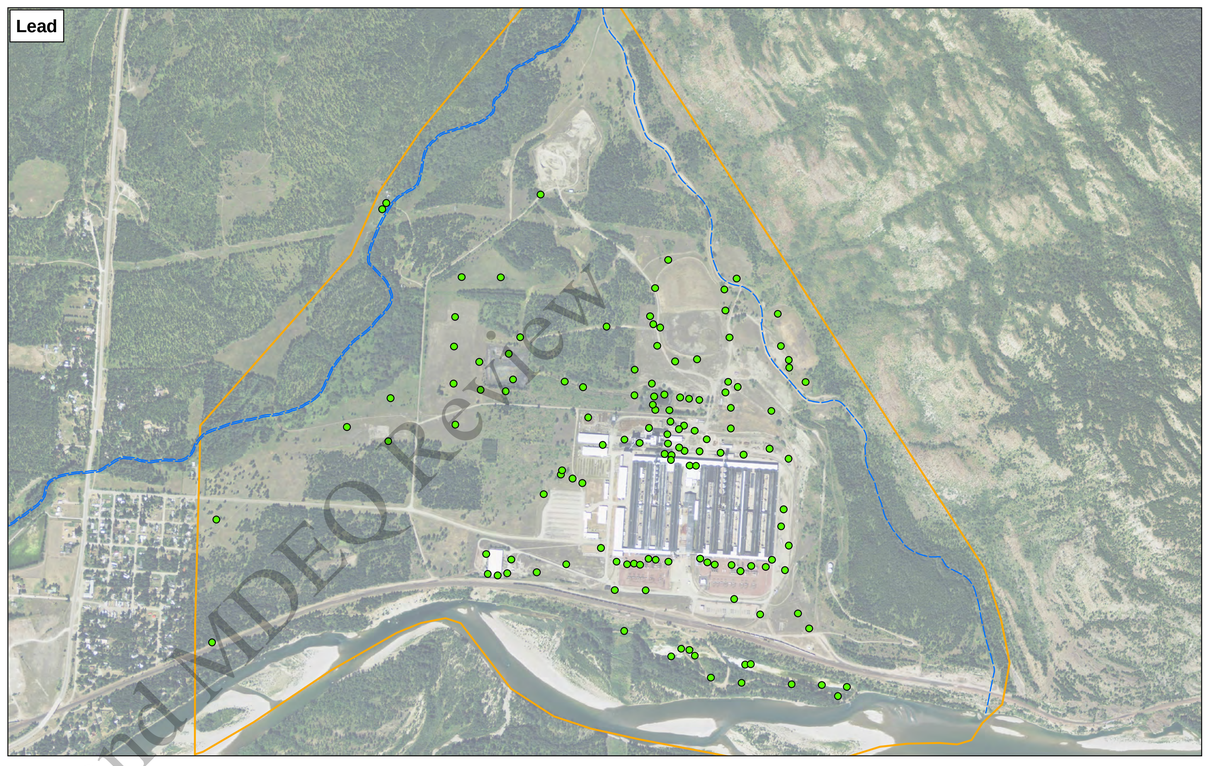
Iron



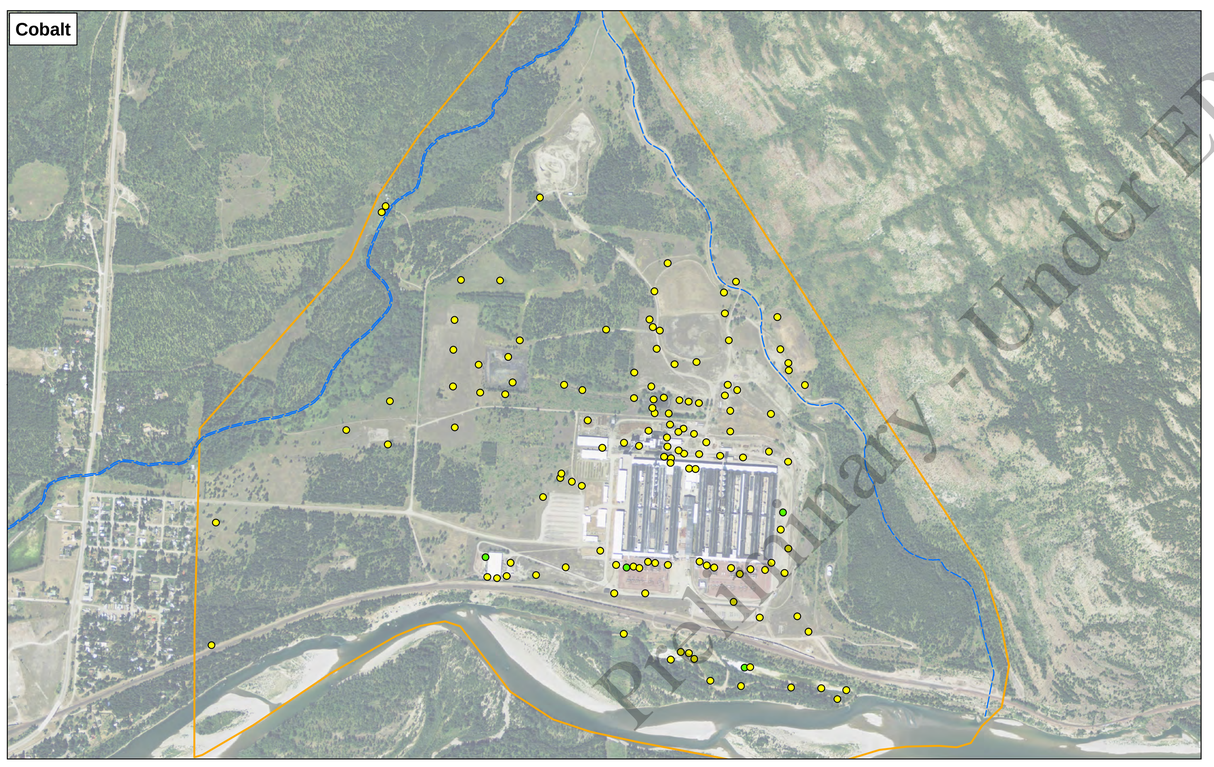
Arsenic



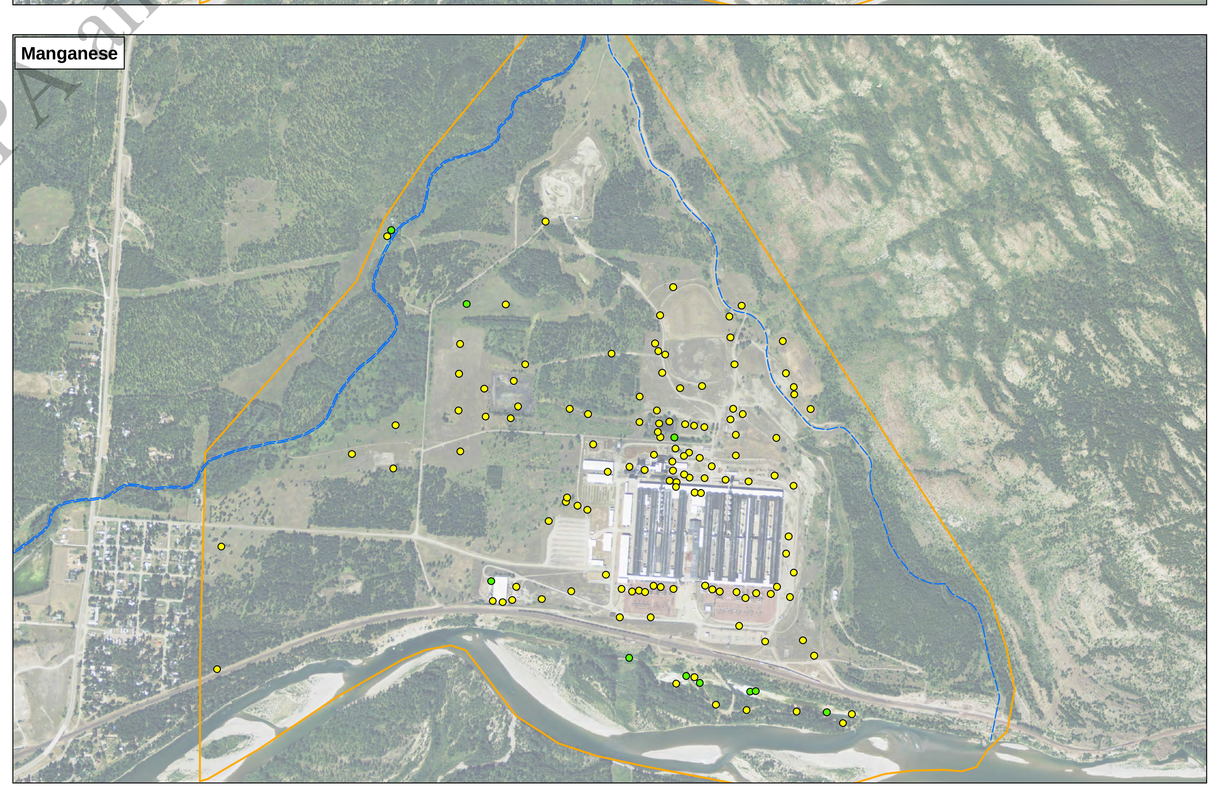
Lead



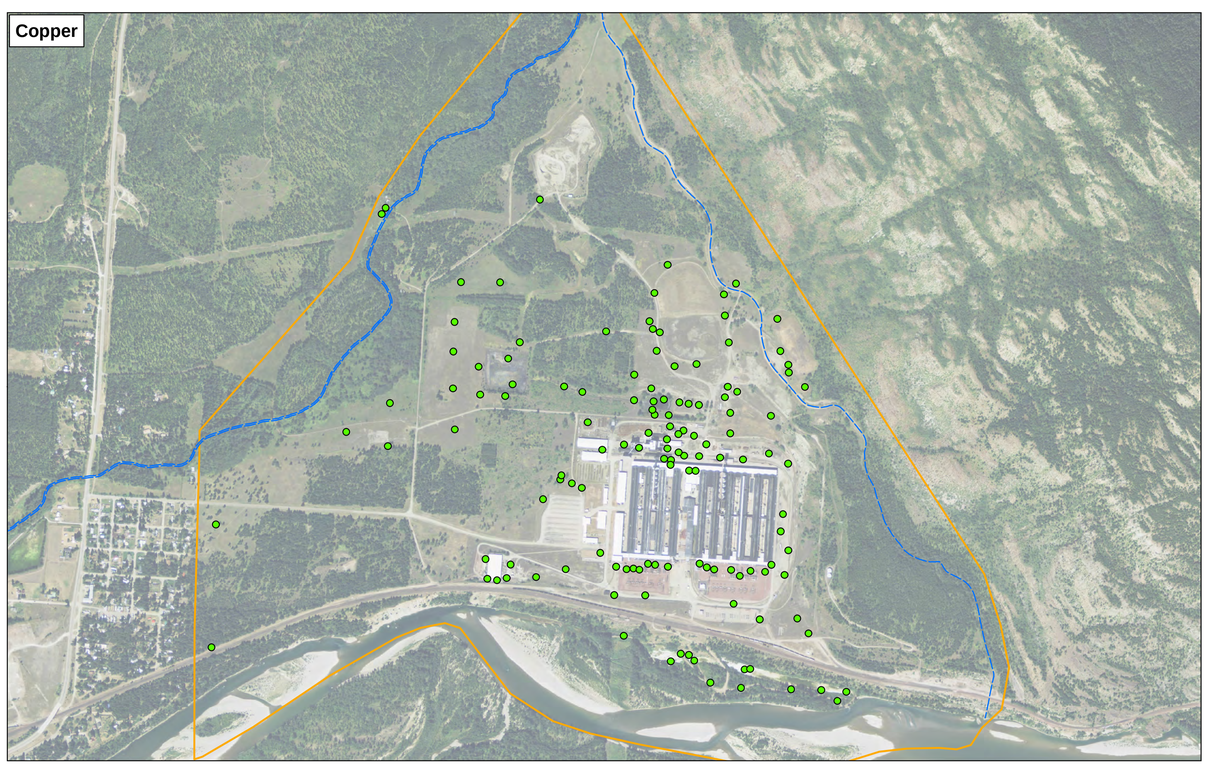
Cobalt



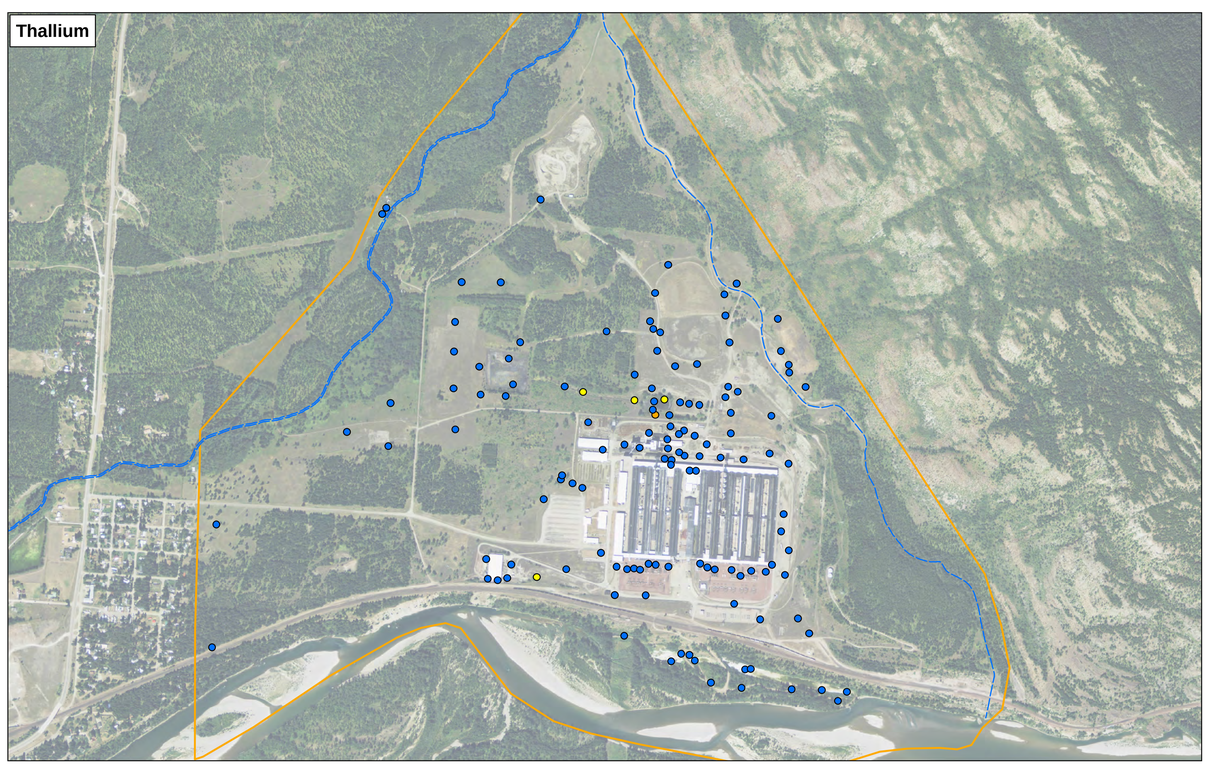
Manganese



Copper



Thallium



Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Compound	Residential* mg/kg	Industrial** mg/kg
Aluminum	7700	110000
Arsenic	0.68	3
Cobalt	2.3	35
Copper	310	4700
Iron	5500	82000
Lead	400	800
Manganese	180	2600
Thallium	0.078	1.2

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
1. All intermediate–depth soil samples were typically collected from a 10 – 12 feet depth interval

N

1,750 0 1,750 Feet

Title:

CONCENTRATIONS OF SELECTED METALS IN INTERMEDIATE-DEPTH SOIL

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

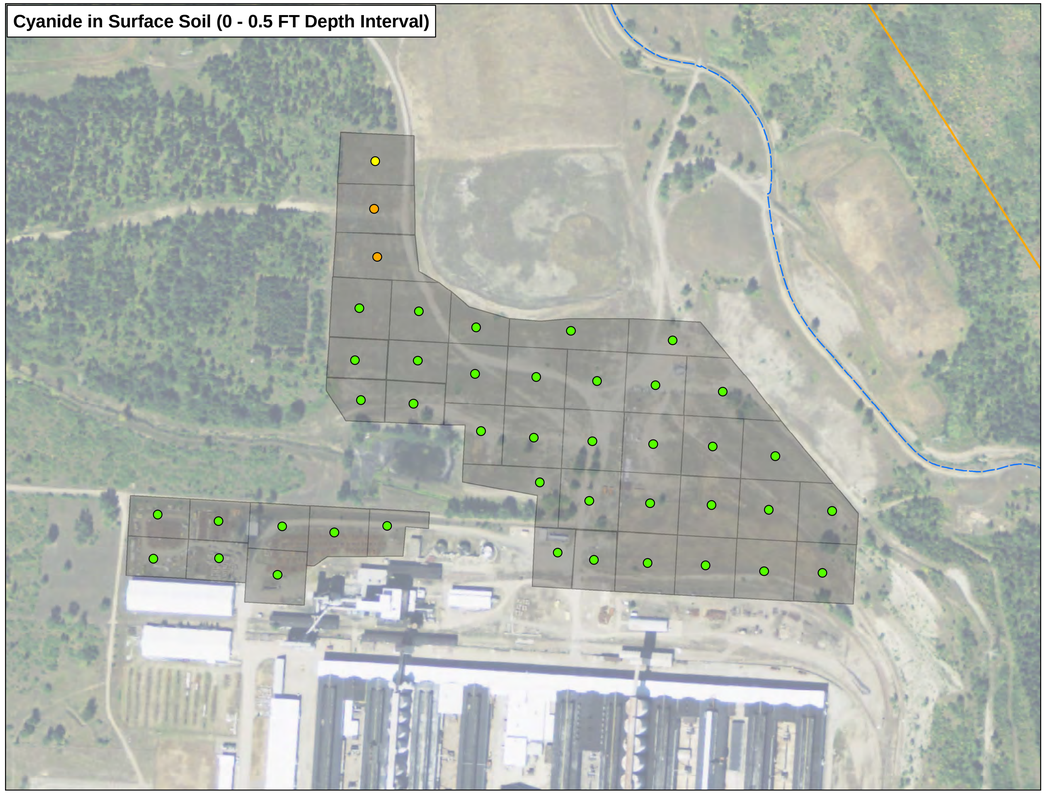
COLUMBIA FALLS ALUMINUM COMPANY, LLC

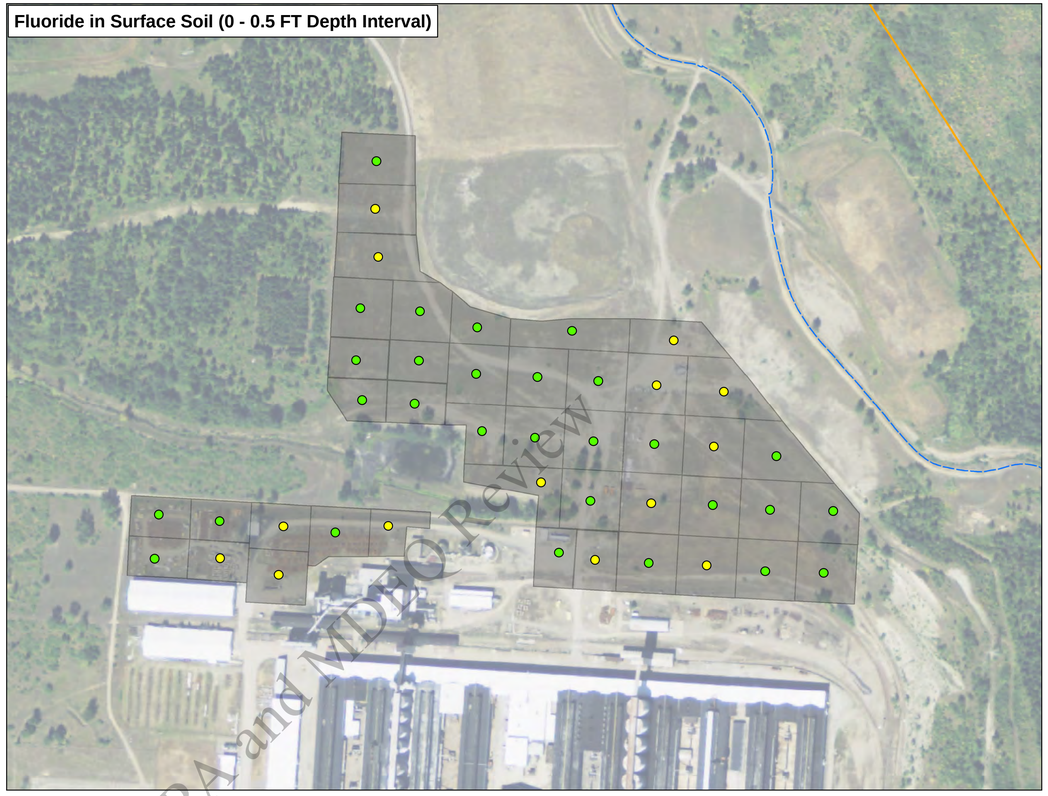
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

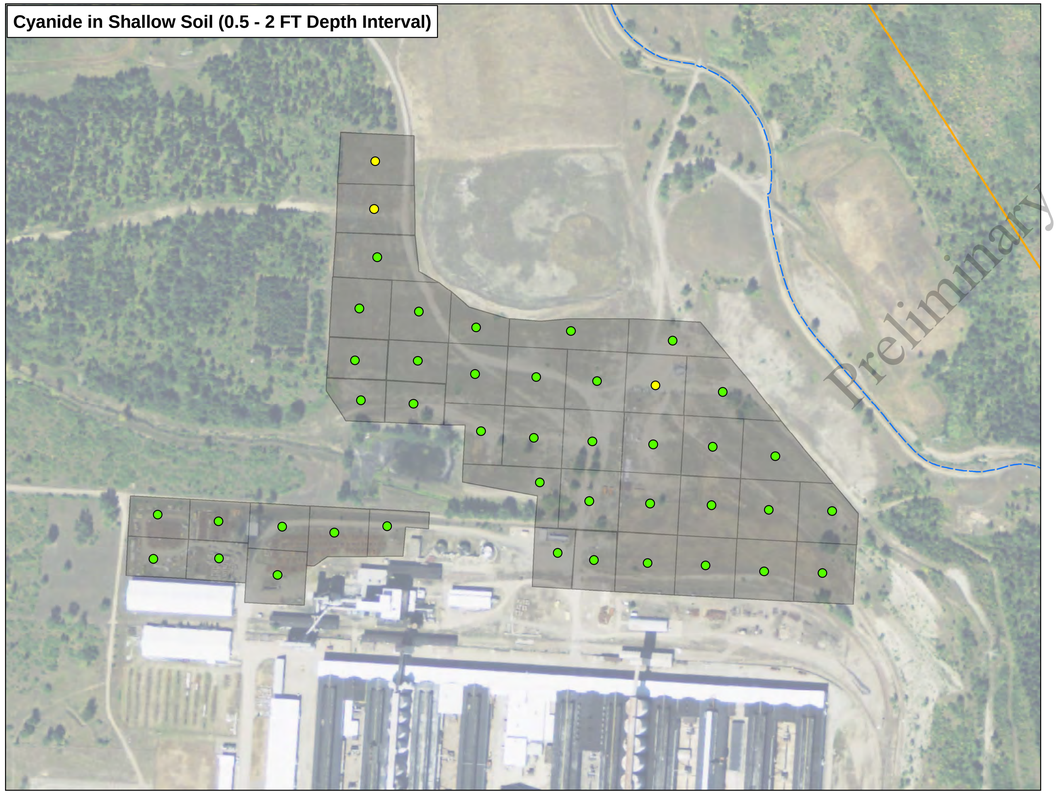
Compiled by: M.R.	Date: 22FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.11	

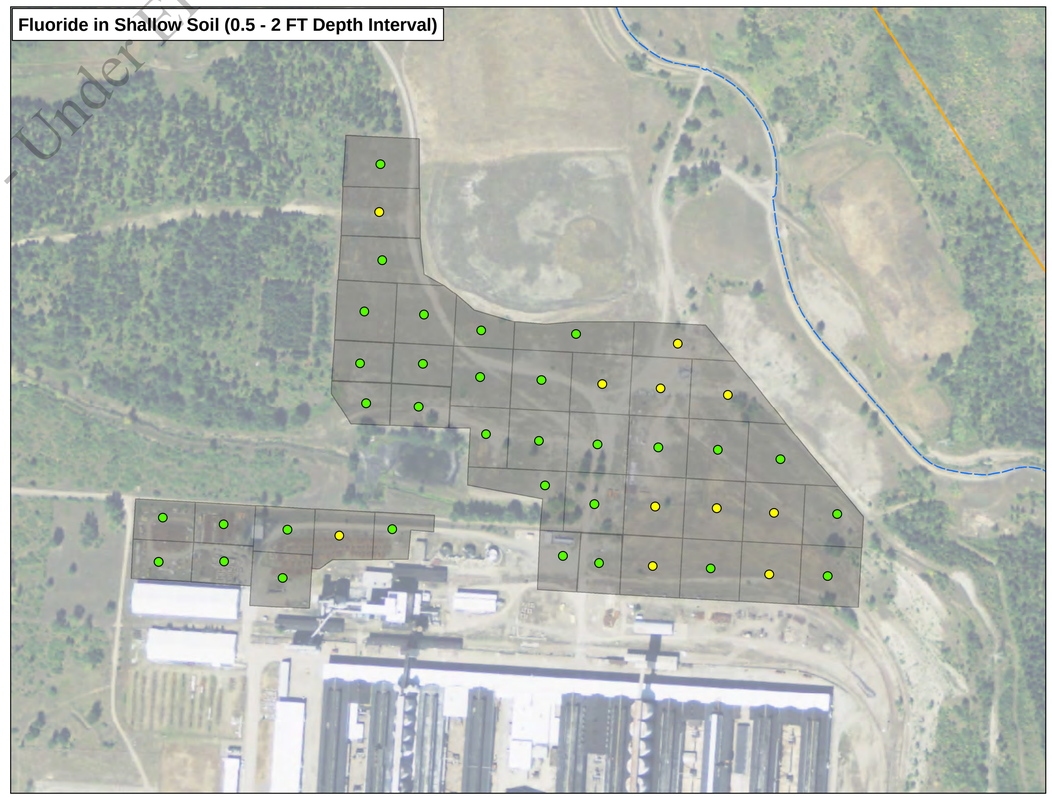
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Preliminary - Under EPA and MDEQ Review

N

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Cyanide	2.3	15
Fluoride	310	4700

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
– Operational Grid Cell
1. Within each operational grid cell 32 soil increments where collected from random locations and combined for laboratory analysis.
2. The dot color represents the incremental sample result for the entire grid cell.

250 0 250
Feet

Title:
CYANIDE AND FLUORIDE IN INCREMENTAL SOIL SAMPLES FROM OPERATIONAL GRID AREA

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

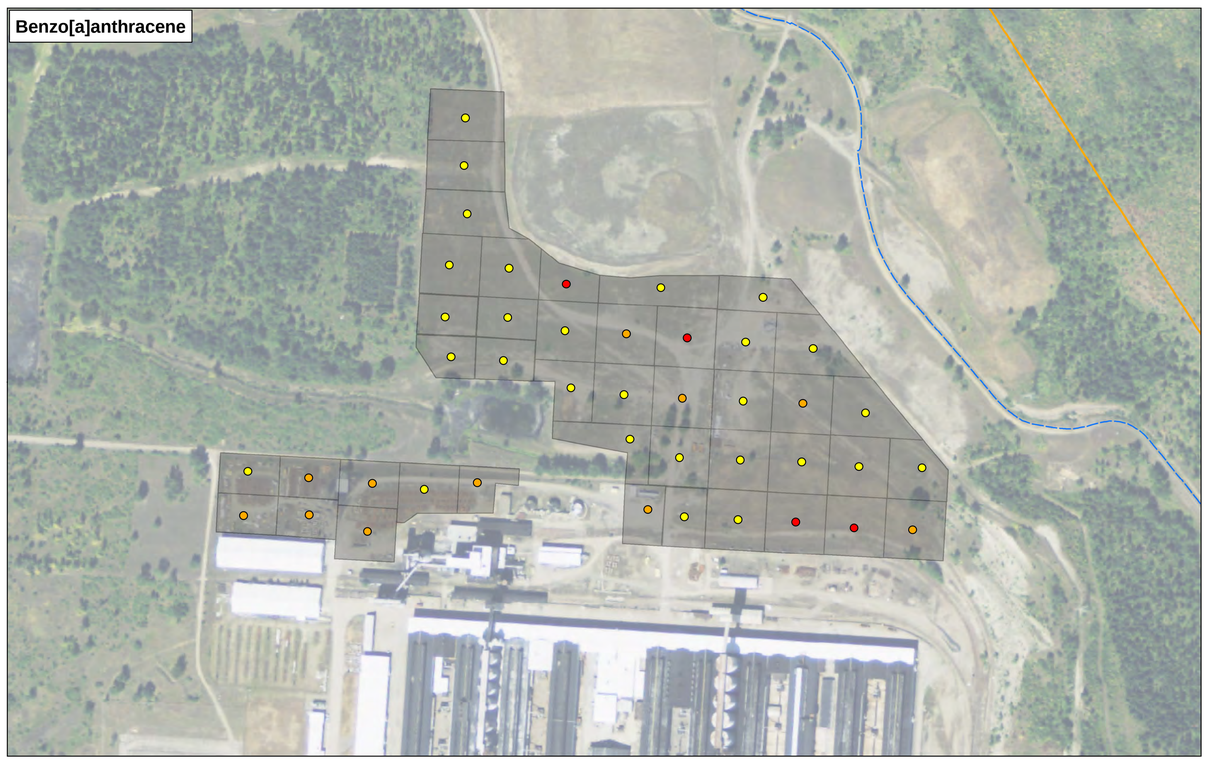
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

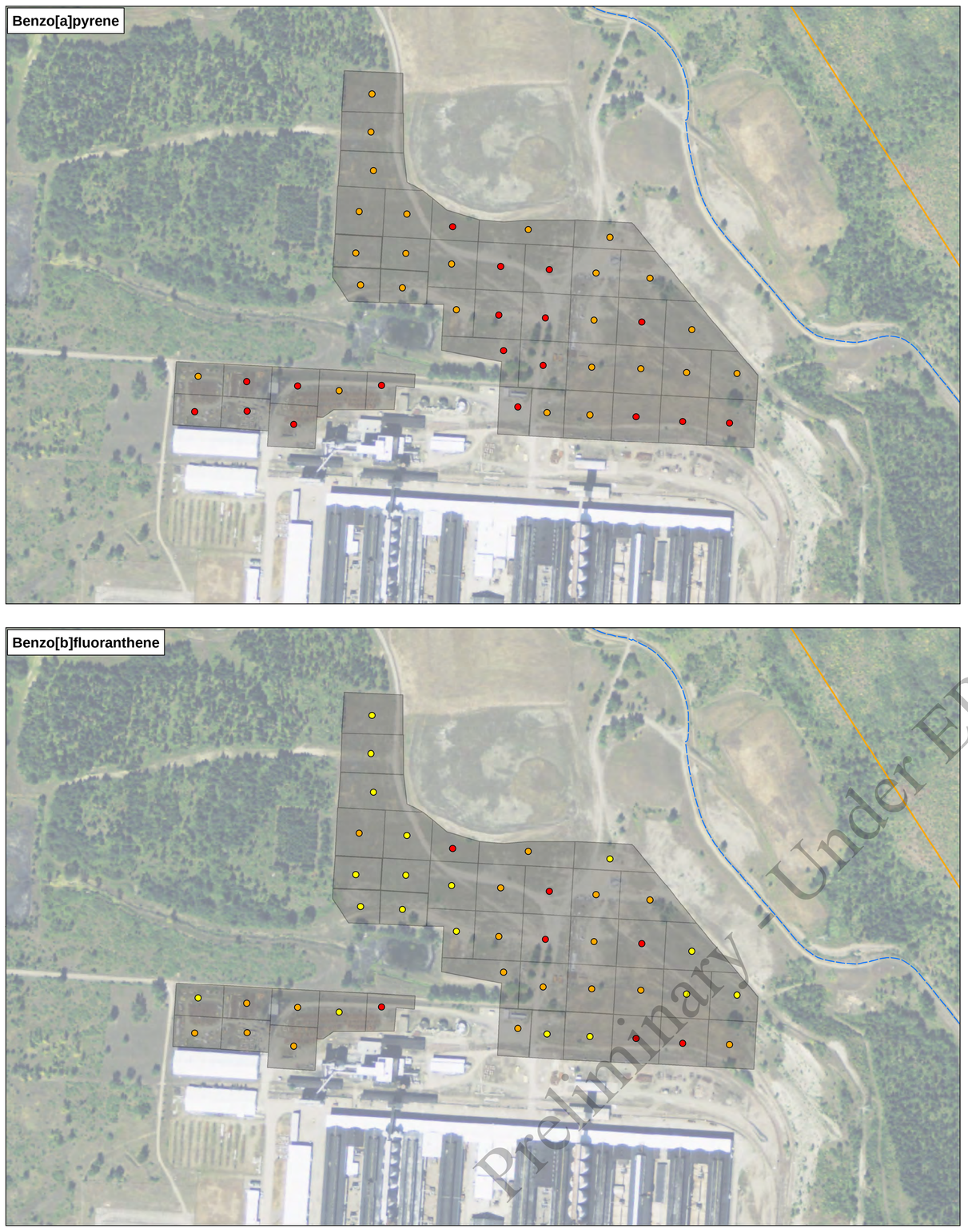
Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
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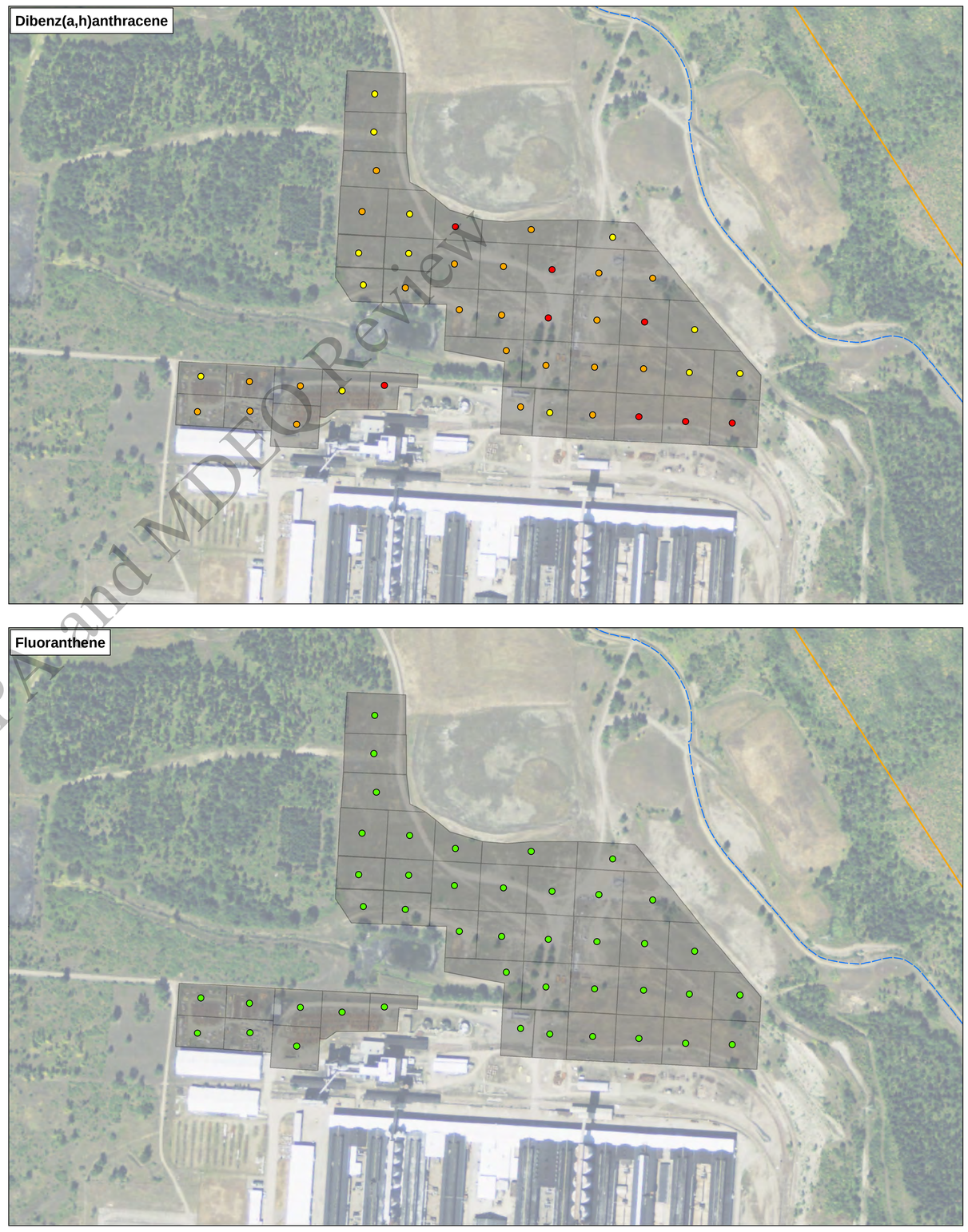
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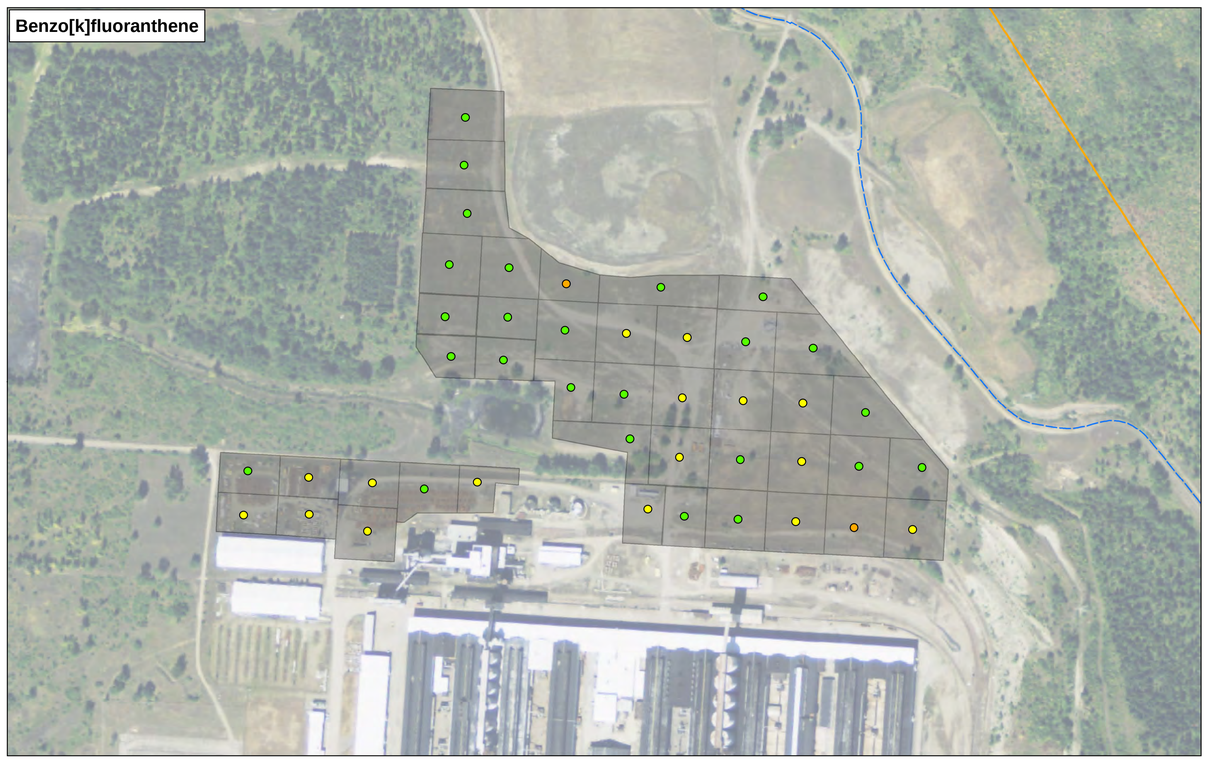
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Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Benzo[a]anthracene	0.16	2.9
Benzo[a]pyrene	0.016	0.29
Benzo[B]fluoranthene	0.16	2.9
Benzo[k]fluoranthene	1.6	29
Chrysene	16	290
Dibenz(a,h)anthracene	0.016	0.29
Fluoranthene	240	3000
Indeno[1,2,3-cd]pyrene	0.16	2.9

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
PAH – Polycyclic Aromatic Hydrocarbon
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms

– Operational Grid Cell

1. Within each operational grid cell 32 soil increments where collected from random locations and combined for laboratory analysis.
2. The dot color represents the incremental sample result for the entire grid cell.
3. All surface soil samples were collected from a 0 – 0.5 feet depth interval

N

250 0 250 500 Feet

Title: **CONCENTRATIONS OF SELECTED PAHS IN INCREMENTAL SURFACE SOIL SAMPLES FROM OPERATIONAL GRID AREA**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

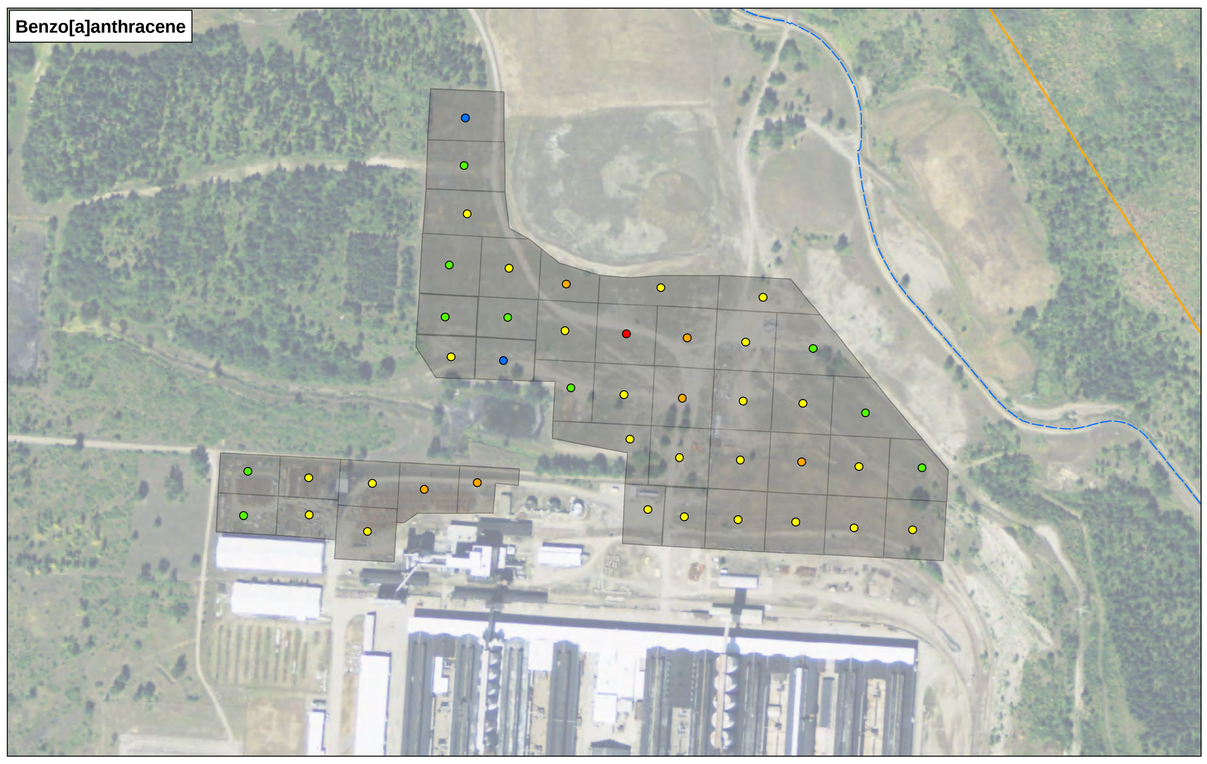
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

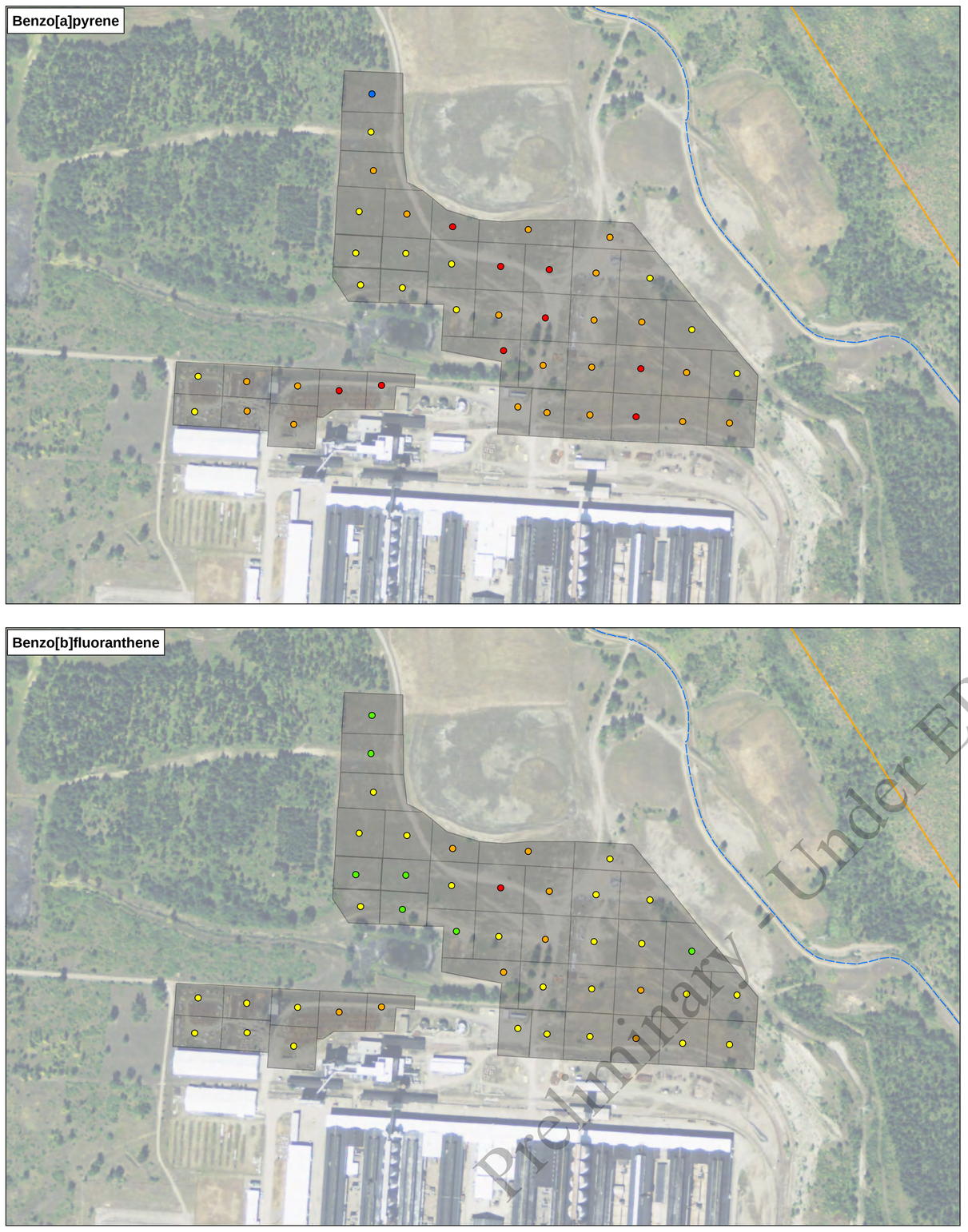
Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.13	

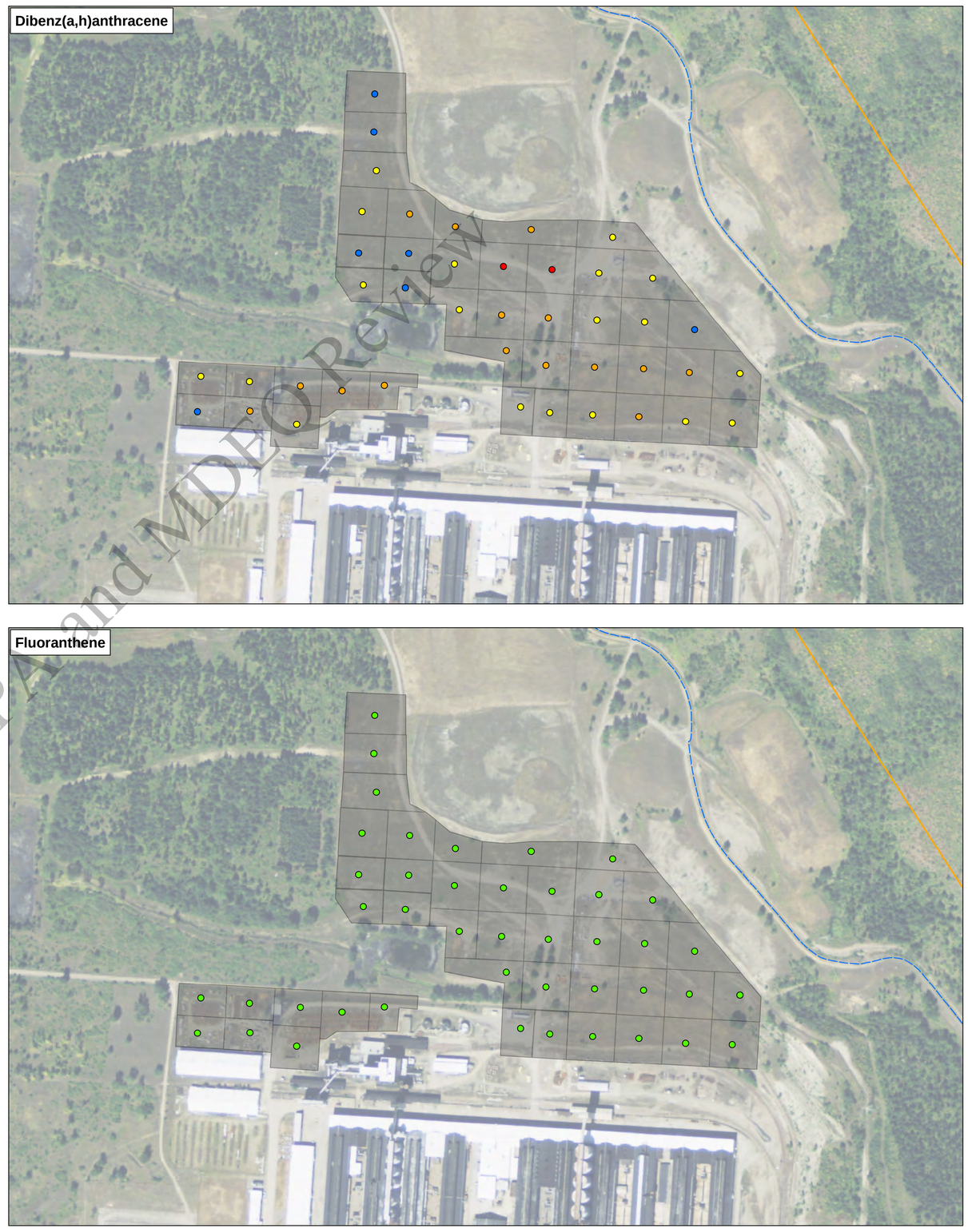
PLATE **N9**

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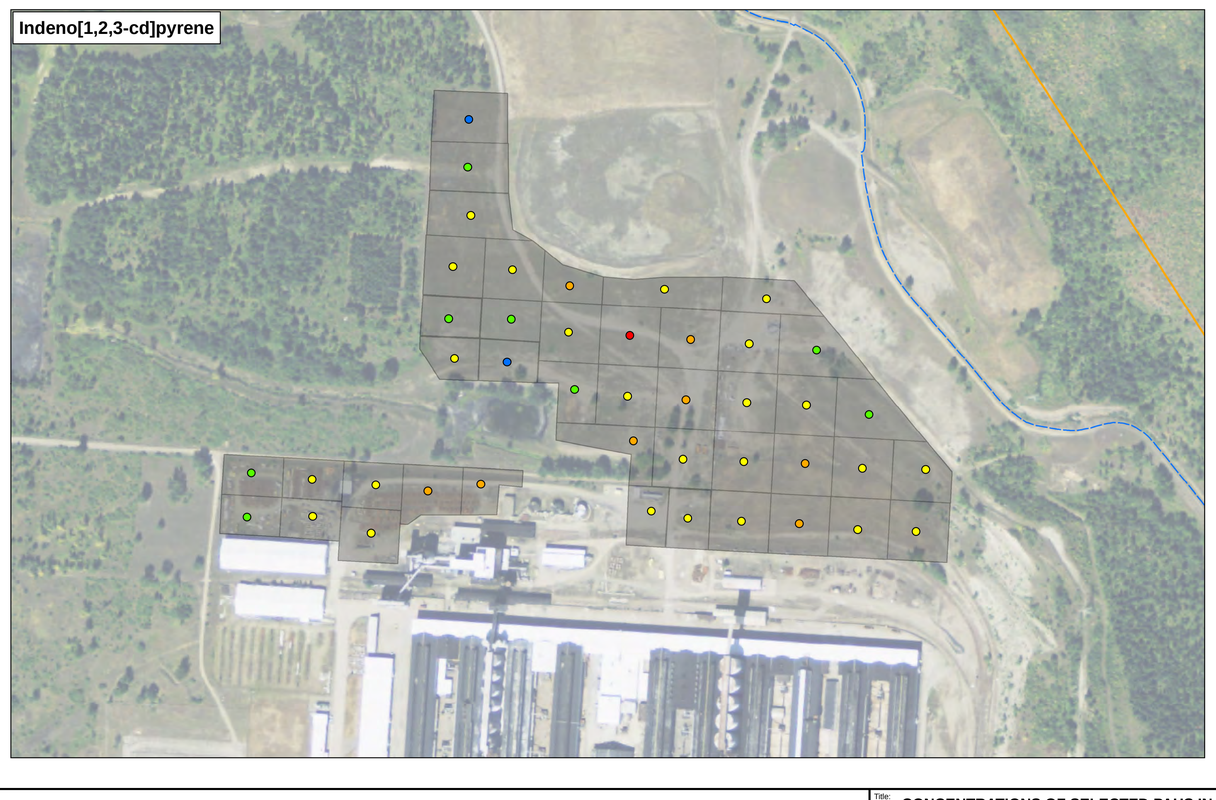












Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Benzo[a]anthracene	0.16	2.9
Benzo[a]pyrene	0.016	0.29
Benzo[B]fluoranthene	0.16	2.9
Benzo[k]fluoranthene	1.6	29
Chrysene	16	290
Dibenz(a,h)anthracene	0.016	0.29
Fluoranthene	240	3000
Indeno[1,2,3-cd]pyrene	0.16	2.9

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
PAH – Polycyclic Aromatic Hydrocarbon
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms

– Operational Grid Cell

1. Within each operational grid cell 32 soil increments where collected from random locations and combined for laboratory analysis.
2. The dot color represents the incremental sample result for the entire grid cell.
3. All shallow soil samples were collected from a 0.5 – 2 feet depth interval

N

250 0 250 500 Feet

Title: **CONCENTRATIONS OF SELECTED PAHS IN INCREMENTAL SHALLOW SOIL SAMPLES FROM OPERATIONAL GRID AREA**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

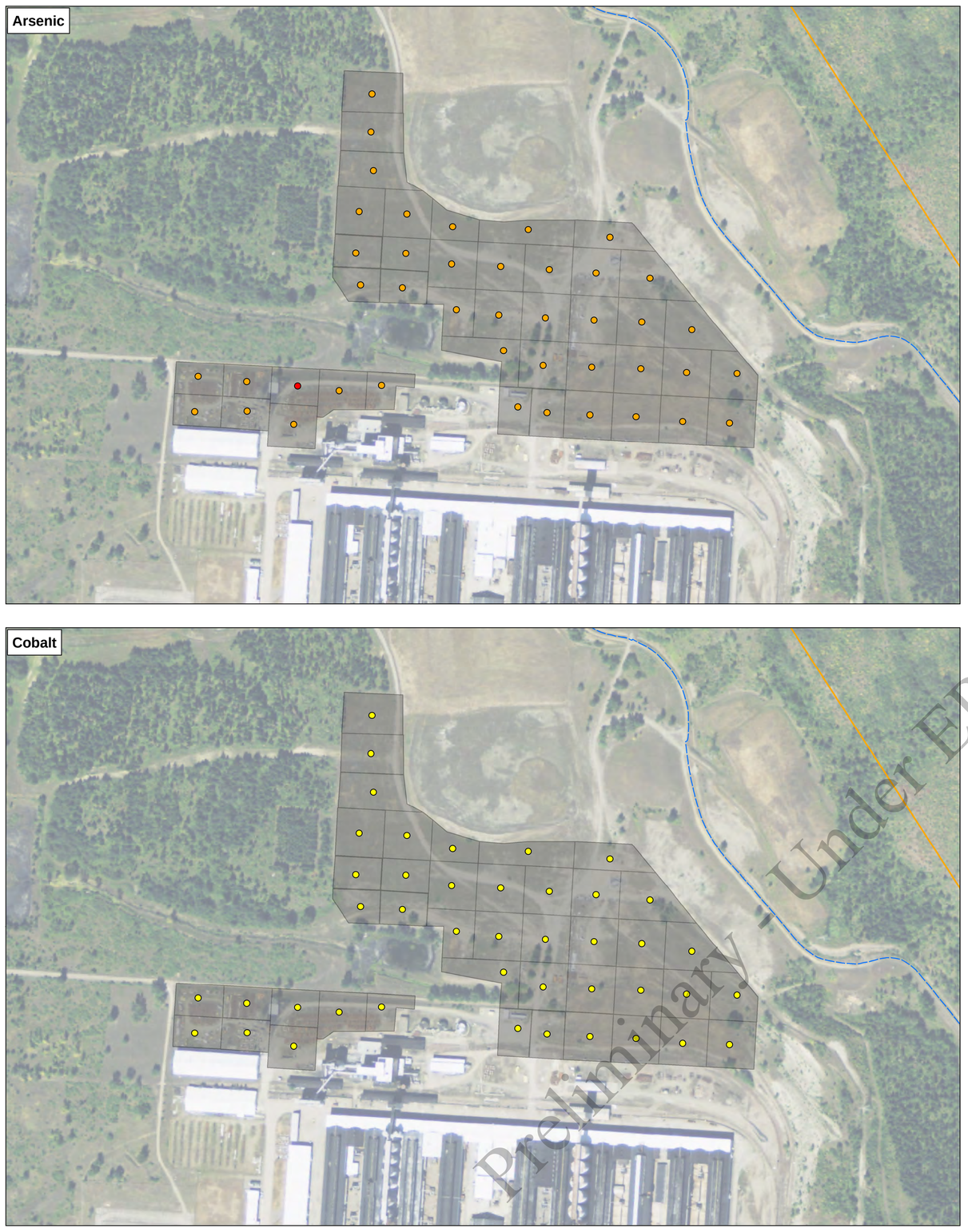
Compiled by: M.R.	Date: 23FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.14	

PLATE **N10**

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Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Aluminum	7700	110000
Arsenic	0.68	3
Cobalt	2.3	35
Copper	310	4700
Iron	5500	82000
Lead	400	800
Manganese	180	2600
Thallium	0.078	1.2

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
PAH – Polycyclic Aromatic Hydrocarbon
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms
1. All surface soil samples were collected from a 0 – 0.5 feet depth interval

N

250 0 250 500 Feet

Title: **CONCENTRATIONS OF SELECTED METALS IN INCREMENTAL SURFACE SOIL SAMPLES FROM OPERATIONAL GRID AREA**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.15	

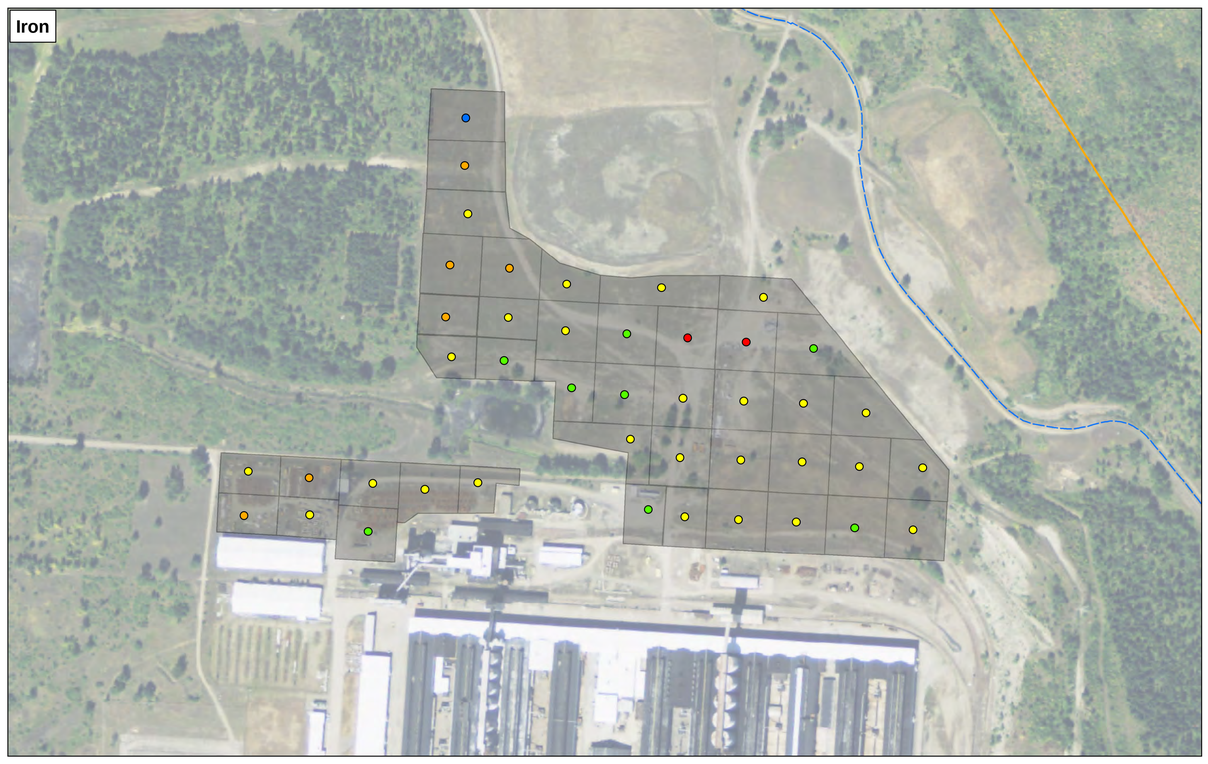
PLATE **N11**

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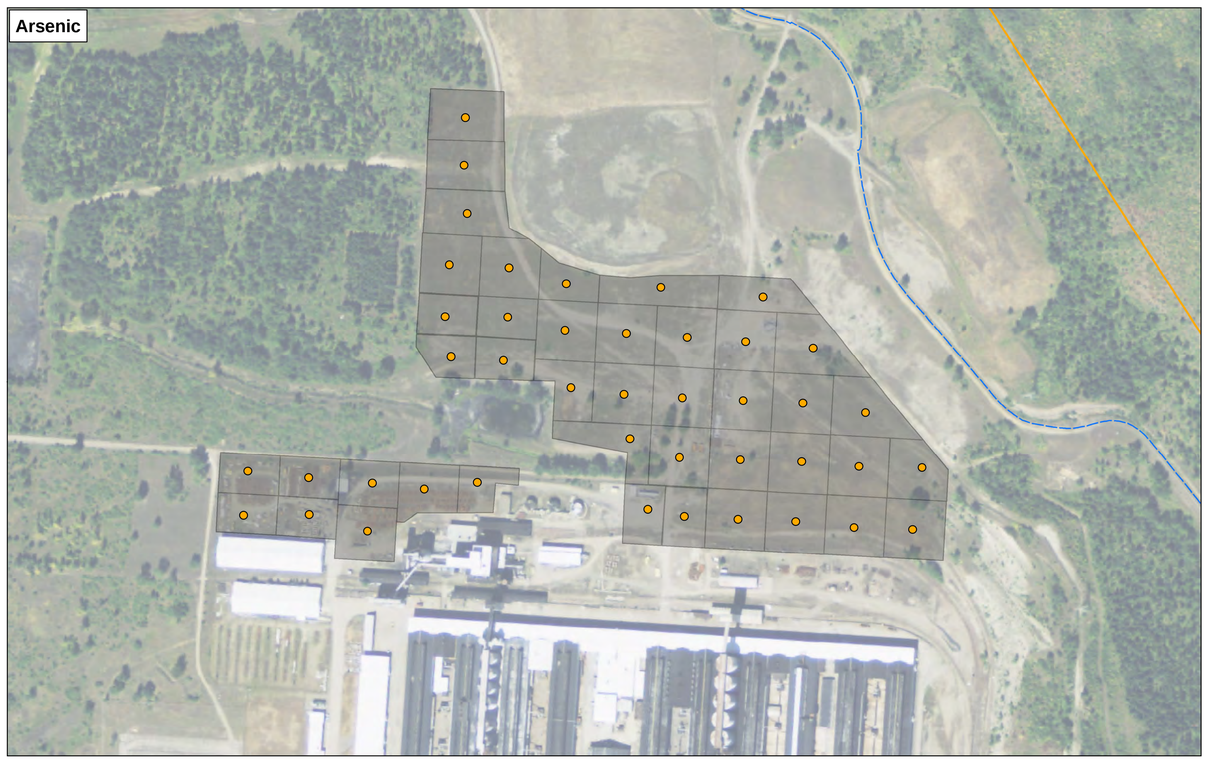
Aluminum



Iron



Arsenic



Lead



Cobalt



Manganese



Copper



Thallium



Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Aluminum	7700	110000
Arsenic	0.68	3
Cobalt	2.3	35
Copper	310	4700
Iron	5500	82000
Lead	400	800
Manganese	180	2600
Thallium	0.078	1.2

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
Ft –Bls – Feet Below Land Surface
mg/kg – Milligrams/Kilograms

– Operational Grid Cell

1. Within each operational grid cell 32 soil increments where collected from random locations and combined for laboratory analysis.
2. The dot color represents the incremental sample result for the entire grid cell.
3. All shallow soil samples were collected from a 0.5 – 2 feet depth interval

N

250 0 250 500 Feet

Title: **CONCENTRATIONS OF SELECTED METALS IN INCREMENTAL SHALLOW SOIL SAMPLES FROM OPERATIONAL GRID AREA**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 23FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.16	

PLATE **N12**

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APPENDIX O

ProUCL Outputs for Lead Sieved
Vs
Bulk Concentration Comparisons

Preliminary - Under EPA and MDEQ Review

Table O. ProUCL Outputs for Lead Sieved Vs Bulk Concentration Comparisons
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1	**UCL Statistics for Data Sets with Non-Detects**											
2												
3			User Selected Options									
4			Date/Time of Computation	ProUCL 5.11/9/2017 10:53:31 AM								
5			From File	Lead Data_121216.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Number of Bootstrap Operations	2000								
9												
10												
11	**Lead Ratio**											
12												
13	**General Statistics**											
14					Total Number of Observations	36			Number of Distinct Observations	15		
15									Number of Missing Observations	0		
16					Minimum	0.7			Mean	1.428		
17					Maximum	5.1			Median	1.1		
18					SD	1.028			Std. Error of Mean	0.171		
19					Coefficient of Variation	0.72			Skewness	2.396		
20												
21	**Normal GOF Test**											
22					Shapiro Wilk Test Statistic	0.662			**Shapiro Wilk GOF Test**			
23					5% Shapiro Wilk Critical Value	0.935			Data Not Normal at 5% Significance Level			
24					Lilliefors Test Statistic	0.289			**Lilliefors GOF Test**			
25					5% Lilliefors Critical Value	0.145			Data Not Normal at 5% Significance Level			
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
30					95% Student's-t UCL	1.717			95% Adjusted-CLT UCL (Chen-1995)	1.783		
31									95% Modified-t UCL (Johnson-1978)	1.729		
32												
33	**Gamma GOF Test**											
34					A-D Test Statistic	2.612			**Anderson-Darling Gamma GOF Test**			
35					5% A-D Critical Value	0.753			Data Not Gamma Distributed at 5% Significance Level			
36					K-S Test Statistic	0.219			**Kolmogorov-Smirnov Gamma GOF Test**			
37					5% K-S Critical Value	0.148			Data Not Gamma Distributed at 5% Significance Level			
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												

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Table O. ProUCL Outputs for Lead Sieved Vs Bulk Concentration Comparisons
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
40	**Gamma Statistics**											
41					k hat (MLE)	3.321			k star (bias corrected MLE)			3.063
42					Theta hat (MLE)	0.43			Theta star (bias corrected MLE)			0.466
43					nu hat (MLE)	239.1			nu star (bias corrected)			220.5
44					MLE Mean (bias corrected)	1.428			MLE Sd (bias corrected)			0.816
45									Approximate Chi Square Value (0.05)			187.2
46					Adjusted Level of Significance	0.0428			Adjusted Chi Square Value			185.8
47												
48	**Assuming Gamma Distribution**											
49			95% Approximate Gamma UCL (use when n>=50))			1.682			95% Adjusted Gamma UCL (use when n<50)			1.695
50												
51	**Lognormal GOF Test**											
52					Shapiro Wilk Test Statistic	0.848			**Shapiro Wilk Lognormal GOF Test**			
53					5% Shapiro Wilk Critical Value	0.935			Data Not Lognormal at 5% Significance Level			
54					Lilliefors Test Statistic	0.172			**Lilliefors Lognormal GOF Test**			
55					5% Lilliefors Critical Value	0.145			Data Not Lognormal at 5% Significance Level			
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	-0.357			Mean of logged Data			0.198
60					Maximum of Logged Data	1.629			SD of logged Data			0.513
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	1.643			90% Chebyshev (MVUE) UCL			1.758
64					95% Chebyshev (MVUE) UCL	1.927			97.5% Chebyshev (MVUE) UCL			2.161
65					99% Chebyshev (MVUE) UCL	2.621						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	1.71			95% Jackknife UCL			1.717
72					95% Standard Bootstrap UCL	1.71			95% Bootstrap-t UCL			1.886
73					95% Hall's Bootstrap UCL	1.82			95% Percentile Bootstrap UCL			1.728
74					95% BCA Bootstrap UCL	1.797						
75					90% Chebyshev(Mean, Sd) UCL	1.942			95% Chebyshev(Mean, Sd) UCL			2.175
76					97.5% Chebyshev(Mean, Sd) UCL	2.498			99% Chebyshev(Mean, Sd) UCL			3.133
77												
78	**Suggested UCL to Use**											
79					95% Chebyshev (Mean, Sd) UCL	2.175						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

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APPENDIX P

ProUCL Outputs for Background Threshold Values

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1				**Background Statistics for Data Sets with Non-Detects**								
2		**User Selected Options**										
3		Date/Time of Computation		ProUCL 5.112/5/2016 9:06:34 AM								
4		From File		BG Input_a.xls								
5		Full Precision		OFF								
6		Confidence Coefficient		95%								
7		Coverage		90%								
8		Different or Future K Observations		1								
9		Number of Bootstrap Operations		2000								
10												
11	**Aluminum (0 - 0.5)**											
12												
13	**General Statistics**											
14				Total Number of Observations		8			Number of Distinct Observations			8
15				Minimum		17300			First Quartile			19225
16				Second Largest		26900			Median			20300
17				Maximum		29200			Third Quartile			22100
18				Mean		21525			SD			4228
19				Coefficient of Variation		0.196			Skewness			1.209
20				Mean of logged Data		9.962			SD of logged Data			0.184
21												
22				**Critical Values for Background Threshold Values (BTVs)**								
23				209		2.582			d2max (for USL)			2.032
24												
25				**Normal GOF Test**								
26				Shapiro Wilk Test Statistic		0.824			**Shapiro Wilk GOF Test**			
27				5% Shapiro Wilk Critical Value		0.818			Data appear Normal at 5% Significance Level			
28				Lilliefors Test Statistic		0.346			**Lilliefors GOF Test**			
29				5% Lilliefors Critical Value		0.283			Data Not Normal at 5% Significance Level			
30				**Data appear Approximate Normal at 5% Significance Level**								
31												
32				**Background Statistics Assuming Normal Distribution**								
33				95% UTL with 90% Coverage		32443			90% Percentile (z)			26944
34				95% UPL (t)		30022			95% Percentile (z)			28480
35				95% USL		30116			99% Percentile (z)			31362
36												
37				**Gamma GOF Test**								

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
38					A-D Test Statistic	0.691	**Anderson-Darling Gamma GOF Test**					
39					5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level					
40					K-S Test Statistic	0.336	**Kolmogorov-Smirnov Gamma GOF Test**					
41					5% K-S Critical Value	0.294	Data Not Gamma Distributed at 5% Significance Level					
42	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
43												
44	**Gamma Statistics**											
45					k hat (MLE)	32.52			k star (bias corrected MLE)			20.41
46					Theta hat (MLE)	661.9			Theta star (bias corrected MLE)			1055
47					nu hat (MLE)	520.3			nu star (bias corrected)			326.5
48					MLE Mean (bias corrected)	21525			MLE Sd (bias corrected)			4765
49												
50	**Background Statistics Assuming Gamma Distribution**											
51				95% Wilson Hilferty (WH) Approx. Gamma UPL		30413			90% Percentile			27812
52				95% Hawkins Wixley (HW) Approx. Gamma UPL		30473			95% Percentile			29915
53				95% WH Approx. Gamma UTL with	90% Coverage	33417			99% Percentile			34131
54				95% HW Approx. Gamma UTL with	90% Coverage	33568						
55					95% WH USL	30526			95% HW USL			30588
56												
57	**Lognormal GOF Test**											
58					Shapiro Wilk Test Statistic	0.858	**Shapiro Wilk Lognormal GOF Test**					
59					5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level					
60					Lilliefors Test Statistic	0.322	**Lilliefors Lognormal GOF Test**					
61					5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level					
62	**Data appear Approximate Lognormal at 5% Significance Level**											
63												
64	**Background Statistics assuming Lognormal Distribution**											
65				95% UTL with	90% Coverage	34072			90% Percentile (z)			26826
66					95% UPL (t)	30668			95% Percentile (z)			28680
67					95% USL	30793			99% Percentile (z)			32508
68												
69	**Nonparametric Distribution Free Background Statistics**											
70	**Data appear Approximate Normal at 5% Significance Level**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

71											
72	**Nonparametric Upper Limits for Background Threshold Values**										
73	Order of Statistic, r				8	95% UTL with 90% Coverage					29200
74	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
75						Approximate Sample Size needed to achieve specified CC					29
76	95% Percentile Bootstrap UTL with 90% Coverage				29200	95% BCA Bootstrap UTL with 90% Coverage					29200
77	95% UPL				29200	90% Percentile					27590
78	90% Chebyshev UPL				34980	95% Percentile					28395
79	95% Chebyshev UPL				41074	99% Percentile					29039
80	95% USL				29200						
81											
82	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
83	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
84	and consists of observations collected from clean unimpacted locations.										
85	The use of USL tends to provide a balance between false positives and false negatives provided the data										
86	represents a background data set and when many onsite observations need to be compared with the BTV.										
87											
88	**Aluminum (0.5 - 2)**										
89											
90	**General Statistics**										
91	Total Number of Observations				8	Number of Distinct Observations					8
92	Minimum				11700	First Quartile					16100
93	Second Largest				19600	Median					17750
94	Maximum				30900	Third Quartile					19075
95	Mean				18575	SD					5571
96	Coefficient of Variation				0.3	Skewness					1.66
97	Mean of logged Data				9.795	SD of logged Data					0.273
98											
99	**Critical Values for Background Threshold Values (BTVs)**										
100	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032
101											
102	**Normal GOF Test**										
103	Shapiro Wilk Test Statistic				0.828	**Shapiro Wilk GOF Test**					
104	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level					
105	Lilliefors Test Statistic				0.302	**Lilliefors GOF Test**					
106	5% Lilliefors Critical Value				0.283	Data Not Normal at 5% Significance Level					
107	**Data appear Approximate Normal at 5% Significance Level**										
108											
109	**Background Statistics Assuming Normal Distribution**										
110	95% UTL with 90% Coverage				32959	90% Percentile (z)					25714
111	95% UPL (t)				29770	95% Percentile (z)					27738
112	95% USL				29893	99% Percentile (z)					31535
113											
114	**Gamma GOF Test**										
115	A-D Test Statistic				0.524	**Anderson-Darling Gamma GOF Test**					
116	5% A-D Critical Value				0.716	Detected data appear Gamma Distributed at 5% Significance Level					
117	K-S Test Statistic				0.259	**Kolmogorov-Smirnov Gamma GOF Test**					
118	5% K-S Critical Value				0.294	Detected data appear Gamma Distributed at 5% Significance Level					
119	**Detected data appear Gamma Distributed at 5% Significance Level**										
120											
121	**Gamma Statistics**										
122	k hat (MLE)				14.7	k star (bias corrected MLE)					9.27
123	Theta hat (MLE)				1264	Theta star (bias corrected MLE)					2004
124	nu hat (MLE)				235.2	nu star (bias corrected)					148.3
125	MLE Mean (bias corrected)				18575	MLE Sd (bias corrected)					6101
126											
127	**Background Statistics Assuming Gamma Distribution**										
128	95% Wilson Hilferty (WH) Approx. Gamma UPL				30439	90% Percentile					26696
129	95% Hawkins Wixley (HW) Approx. Gamma UPL				30574	95% Percentile					29614
130	95% WH Approx. Gamma UTL with 90% Coverage				34747	99% Percentile					35622
131	95% HW Approx. Gamma UTL with 90% Coverage				35085						
132	95% WH USL				30598	95% HW USL					30740
133											
134	**Lognormal GOF Test**										
135	Shapiro Wilk Test Statistic				0.909	**Shapiro Wilk Lognormal GOF Test**					
136	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
137	Lilliefors Test Statistic				0.249	**Lilliefors Lognormal GOF Test**					
138	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
139	**Data appear Lognormal at 5% Significance Level**										
140											
141	**Background Statistics assuming Lognormal Distribution**										
142	95% UTL with 90% Coverage				36343	90% Percentile (z)					25473
143	95% UPL (t)				31080	95% Percentile (z)					28132
144	95% USL				31269	99% Percentile (z)					33891
145											
146	**Nonparametric Distribution Free Background Statistics**										
147	**Data appear Approximate Normal at 5% Significance Level**										
148											
149	**Nonparametric Upper Limits for Background Threshold Values**										
150	Order of Statistic, r				8	95% UTL with 90% Coverage					30900
151	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
152						Approximate Sample Size needed to achieve specified CC					29
153	95% Percentile Bootstrap UTL with 90% Coverage				30900	95% BCA Bootstrap UTL with 90% Coverage					30900
154	95% UPL				30900	90% Percentile					22990
155	90% Chebyshev UPL				36301	95% Percentile					26945
156	95% Chebyshev UPL				44330	99% Percentile					30109

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Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

157				95% USL	30900							
158												
159	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
160	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
161	and consists of observations collected from clean unimpacted locations.											
162	The use of USL tends to provide a balance between false positives and false negatives provided the data											
163	represents a background data set and when many onsite observations need to be compared with the BTV.											
164												
165	**Aluminum (10 - 12)**											
166												
167	**General Statistics**											
168				Total Number of Observations	8			Number of Distinct Observations	8			
169				Minimum	3840			First Quartile	5708			
170				Second Largest	9010			Median	6655			
171				Maximum	13800			Third Quartile	8538			
172				Mean	7389			SD	3100			
173				Coefficient of Variation	0.42			Skewness	1.293			
174				Mean of logged Data	8.837			SD of logged Data	0.395			
175												
176	**Critical Values for Background Threshold Values (BTVs)**											
177				Tolerance Factor K (For UTL)	2.582			d2max (for USL)	2.032			
178												
179	**Normal GOF Test**											
180				Shapiro Wilk Test Statistic	0.904			**Shapiro Wilk GOF Test**				
181				5% Shapiro Wilk Critical Value	0.818			Data appear Normal at 5% Significance Level				
182				Lilliefors Test Statistic	0.208			**Lilliefors GOF Test**				
183				5% Lilliefors Critical Value	0.283			Data appear Normal at 5% Significance Level				
184	**Data appear Normal at 5% Significance Level**											
185												
186	**Background Statistics Assuming Normal Distribution**											
187				95% UTL with 90% Coverage	15392			90% Percentile (z)	11361			
188				95% UPL (t)	13618			95% Percentile (z)	12487			
189				95% USL	13687			99% Percentile (z)	14600			
190												
191	**Gamma GOF Test**											
192				A-D Test Statistic	0.221			**Anderson-Darling Gamma GOF Test**				
193				5% A-D Critical Value	0.717			Detected data appear Gamma Distributed at 5% Significance Level				
194				K-S Test Statistic	0.173			**Kolmogorov-Smirnov Gamma GOF Test**				
195				5% K-S Critical Value	0.295			Detected data appear Gamma Distributed at 5% Significance Level				
196	**Detected data appear Gamma Distributed at 5% Significance Level**											
197												
198	**Gamma Statistics**											
199				k hat (MLE)	7.28			k star (bias corrected MLE)	4.633			
200				Theta hat (MLE)	1015			Theta star (bias corrected MLE)	1595			
201				nu hat (MLE)	116.5			nu star (bias corrected)	74.14			
202				MLE Mean (bias corrected)	7389			MLE Sd (bias corrected)	3433			
203												
204	**Background Statistics Assuming Gamma Distribution**											
205				95% Wilson Hilferty (WH) Approx. Gamma UPL	14426			90% Percentile	11986			
206				95% Hawkins Wixley (HW) Approx. Gamma UPL	14594			95% Percentile	13787			
207				95% WH Approx. Gamma UTL with 90% Coverage	17207			99% Percentile	17606			
208				95% HW Approx. Gamma UTL with 90% Coverage	17587							
209				95% WH USL	14528			95% HW USL	14702			
210												
211	**Lognormal GOF Test**											
212				Shapiro Wilk Test Statistic	0.981			**Shapiro Wilk Lognormal GOF Test**				
213				5% Shapiro Wilk Critical Value	0.818			Data appear Lognormal at 5% Significance Level				
214				Lilliefors Test Statistic	0.147			**Lilliefors Lognormal GOF Test**				
215				5% Lilliefors Critical Value	0.283			Data appear Lognormal at 5% Significance Level				
216	**Data appear Lognormal at 5% Significance Level**											
217												
218	**Background Statistics assuming Lognormal Distribution**											
219				95% UTL with 90% Coverage	19123			90% Percentile (z)	11434			
220				95% UPL (t)	15248			95% Percentile (z)	13200			
221				95% USL	15382			99% Percentile (z)	17284			
222												
223	**Nonparametric Distribution Free Background Statistics**											
224	**Data appear Normal at 5% Significance Level**											
225												
226	**Nonparametric Upper Limits for Background Threshold Values**											
227				Order of Statistic, r	8			95% UTL with 90% Coverage	13800			
228				Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL	0.57			
229								Approximate Sample Size needed to achieve specified CC	29			
230				95% Percentile Bootstrap UTL with 90% Coverage	13800			95% BCA Bootstrap UTL with 90% Coverage	13800			
231				95% UPL	13800			90% Percentile	10447			
232				90% Chebyshev UPL	17252			95% Percentile	12124			
233				95% Chebyshev UPL	21720			99% Percentile	13465			
234				95% USL	13800							
235												
236	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
237	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
238	and consists of observations collected from clean unimpacted locations.											
239	The use of USL tends to provide a balance between false positives and false negatives provided the data											
240	represents a background data set and when many onsite observations need to be compared with the BTV.											
241												
242	**Antimony (0 - 0.5)**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

243											
244	**General Statistics**										
245	Total Number of Observations				8			Number of Missing Observations			0
246	Number of Distinct Observations				6						
247	Number of Detects				0			Number of Non-Detects			8
248	Number of Distinct Detects				0			Number of Distinct Non-Detects			6
249	Minimum Detect				N/A			Minimum Non-Detect			0.35
250	Maximum Detect				N/A			Maximum Non-Detect			0.5
251	Variance Detected				N/A			Percent Non-Detects			100%
252	Mean Detected				N/A			SD Detected			N/A
253	Mean of Detected Logged Data				N/A			SD of Detected Logged Data			N/A
254											
255	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
256	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
257	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
258											
259	**The data set for variable Antimony (0 - 0.5) was not processed!**										
260											
261											
262	**Antimony (0.5 - 2)**										
263											
264	**General Statistics**										
265	Total Number of Observations				8			Number of Missing Observations			0
266	Number of Distinct Observations				5						
267	Number of Detects				0			Number of Non-Detects			8
268	Number of Distinct Detects				0			Number of Distinct Non-Detects			5
269	Minimum Detect				N/A			Minimum Non-Detect			0.36
270	Maximum Detect				N/A			Maximum Non-Detect			0.51
271	Variance Detected				N/A			Percent Non-Detects			100%
272	Mean Detected				N/A			SD Detected			N/A
273	Mean of Detected Logged Data				N/A			SD of Detected Logged Data			N/A
274											
275	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
276	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
277	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
278											
279	**The data set for variable Antimony (0.5 - 2) was not processed!**										
280											
281											
282	**Antimony (10 - 12)**										
283											
284	**General Statistics**										
285	Total Number of Observations				8			Number of Missing Observations			0
286	Number of Distinct Observations				4						
287	Number of Detects				0			Number of Non-Detects			8
288	Number of Distinct Detects				0			Number of Distinct Non-Detects			4
289	Minimum Detect				N/A			Minimum Non-Detect			0.32
290	Maximum Detect				N/A			Maximum Non-Detect			0.35
291	Variance Detected				N/A			Percent Non-Detects			100%
292	Mean Detected				N/A			SD Detected			N/A
293	Mean of Detected Logged Data				N/A			SD of Detected Logged Data			N/A
294											
295	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
296	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
297	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
298											
299	**The data set for variable Antimony (10 - 12) was not processed!**										
300											
301											
302	**Arsenic (0 - 0.5)**										
303											
304	**General Statistics**										
305	Total Number of Observations				8			Number of Distinct Observations			7
306	Minimum				2.8			First Quartile			4.725
307	Second Largest				6.4			Median			4.9
308	Maximum				7.1			Third Quartile			6.025
309	Mean				5.163			SD			1.317
310	Coefficient of Variation				0.255			Skewness			-0.334
311	Mean of logged Data				1.609			SD of logged Data			0.283
312											
313	**Critical Values for Background Threshold Values (BTVs)**										
314	Tolerance Factor K (For UTL)				2.582			d2max (for USL)			2.032
315											
316	**Normal GOF Test**										
317	Shapiro Wilk Test Statistic				0.956			**Shapiro Wilk GOF Test**			
318	5% Shapiro Wilk Critical Value				0.818			Data appear Normal at 5% Significance Level			
319	Lilliefors Test Statistic				0.182			**Lilliefors GOF Test**			
320	5% Lilliefors Critical Value				0.283			Data appear Normal at 5% Significance Level			
321	**Data appear Normal at 5% Significance Level**										
322											
323	**Background Statistics Assuming Normal Distribution**										
324	95% UTL with 90% Coverage				8.563			90% Percentile (z)			6.85
325	95% UPL (t)				7.809			95% Percentile (z)			7.329
326	95% USL				7.838			99% Percentile (z)			8.226
327											
328	**Gamma GOF Test**										

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

329	A-D Test Statistic	0.354	**Anderson-Darling Gamma GOF Test**									
330	5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level									
331	K-S Test Statistic	0.203	**Kolmogorov-Smirnov Gamma GOF Test**									
332	5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level									
333	**Detected data appear Gamma Distributed at 5% Significance Level**											
334												
335	**Gamma Statistics**											
336	k hat (MLE)	15.57	k star (bias corrected MLE)	9.814								
337	Theta hat (MLE)	0.332	Theta star (bias corrected MLE)	0.526								
338	nu hat (MLE)	249.1	nu star (bias corrected)	157								
339	MLE Mean (bias corrected)	5.163	MLE Sd (bias corrected)	1.648								
340												
341	**Background Statistics Assuming Gamma Distribution**											
342	95% Wilson Hilferty (WH) Approx. Gamma UPL	8.362	90% Percentile	7.355								
343	95% Hawkins Wixley (HW) Approx. Gamma UPL	8.463	95% Percentile	8.138								
344	95% WH Approx. Gamma UTL with 90% Coverage	9.516	99% Percentile	9.746								
345	95% HW Approx. Gamma UTL with 90% Coverage	9.697										
346	95% WH USL	8.405	95% HW USL	8.508								
347												
348	**Lognormal GOF Test**											
349	Shapiro Wilk Test Statistic	0.904	**Shapiro Wilk Lognormal GOF Test**									
350	5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level									
351	Lilliefors Test Statistic	0.231	**Lilliefors Lognormal GOF Test**									
352	5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level									
353	**Data appear Lognormal at 5% Significance Level**											
354												
355	**Background Statistics assuming Lognormal Distribution**											
356	95% UTL with 90% Coverage	10.39	90% Percentile (z)	7.185								
357	95% UPL (t)	8.831	95% Percentile (z)	7.965								
358	95% USL	8.887	99% Percentile (z)	9.661								
359												
360	**Nonparametric Distribution Free Background Statistics**											
361	**Data appear Normal at 5% Significance Level**											
362												
363	**Nonparametric Upper Limits for Background Threshold Values**											
364	Order of Statistic, r	8	95% UTL with 90% Coverage	7.1								
365	Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL	0.57								
366			Approximate Sample Size needed to achieve specified CC	29								
367	95% Percentile Bootstrap UTL with 90% Coverage	7.1	95% BCA Bootstrap UTL with 90% Coverage	7.1								
368	95% UPL	7.1	90% Percentile	6.61								
369	90% Chebyshev UPL	9.353	95% Percentile	6.855								
370	95% Chebyshev UPL	11.25	99% Percentile	7.051								
371	95% USL	7.1										
372												
373	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
374	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
375	and consists of observations collected from clean unimpacted locations.											
376	The use of USL tends to provide a balance between false positives and false negatives provided the data											
377	represents a background data set and when many onsite observations need to be compared with the BTV.											
378												
379	**Arsenic (0.5 - 2)**											
380												
381	**General Statistics**											
382	Total Number of Observations	8	Number of Distinct Observations	7								
383	Minimum	2.2	First Quartile	4.625								
384	Second Largest	6	Median	5.3								
385	Maximum	6.8	Third Quartile	5.7								
386	Mean	5.038	SD	1.366								
387	Coefficient of Variation	0.271	Skewness	-1.238								
388	Mean of logged Data	1.573	SD of logged Data	0.345								
389												
390	**Critical Values for Background Threshold Values (BTVs)**											
391	Tolerance Factor K (For UTL)	2.582	d2max (for USL)	2.032								
392												
393	**Normal GOF Test**											
394	Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk GOF Test**									
395	5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level									
396	Lilliefors Test Statistic	0.201	**Lilliefors GOF Test**									
397	5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level									
398	**Data appear Normal at 5% Significance Level**											
399												
400	**Background Statistics Assuming Normal Distribution**											
401	95% UTL with 90% Coverage	8.564	90% Percentile (z)	6.788								
402	95% UPL (t)	7.782	95% Percentile (z)	7.284								
403	95% USL	7.812	99% Percentile (z)	8.215								
404												
405	**Gamma GOF Test**											
406	A-D Test Statistic	0.634	**Anderson-Darling Gamma GOF Test**									
407	5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level									
408	K-S Test Statistic	0.238	**Kolmogorov-Smirnov Gamma GOF Test**									
409	5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level									
410	**Detected data appear Gamma Distributed at 5% Significance Level**											
411												
412	**Gamma Statistics**											
413	k hat (MLE)	11.57	k star (bias corrected MLE)	7.313								
414	Theta hat (MLE)	0.436	Theta star (bias corrected MLE)	0.689								

Preliminary - Under EPA 2nd MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
415					nu hat (MLE)	185.1				nu star (bias corrected)		117
416					MLE Mean (bias corrected)	5.038				MLE Sd (bias corrected)		1.863
417												
418	**Background Statistics Assuming Gamma Distribution**											
419					95% Wilson Hilferty (WH) Approx. Gamma UPL	8.727				90% Percentile		7.523
420					95% Hawkins Wixley (HW) Approx. Gamma UPL	8.913				95% Percentile		8.441
421					95% WH Approx. Gamma UTL with 90% Coverage	10.1				99% Percentile		10.35
422					95% HW Approx. Gamma UTL with 90% Coverage	10.42						
423					95% WH USL	8.778				95% HW USL		8.968
424												
425	**Lognormal GOF Test**											
426					Shapiro Wilk Test Statistic	0.793	**Shapiro Wilk Lognormal GOF Test**					
427					5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
428					Lilliefors Test Statistic	0.27	**Lilliefors Lognormal GOF Test**					
429					5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level					
430	**Data appear Approximate Lognormal at 5% Significance Level**											
431												
432	**Background Statistics assuming Lognormal Distribution**											
433					95% UTL with 90% Coverage	11.74				90% Percentile (z)		7.498
434					95% UPL (t)	9.635				95% Percentile (z)		8.498
435					95% USL	9.709				99% Percentile (z)		10.75
436												
437	**Nonparametric Distribution Free Background Statistics**											
438	**Data appear Normal at 5% Significance Level**											
439												
440	**Nonparametric Upper Limits for Background Threshold Values**											
441					Order of Statistic, r	8				95% UTL with 90% Coverage		6.8
442					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
443										Approximate Sample Size needed to achieve specified CC		29
444					95% Percentile Bootstrap UTL with 90% Coverage	6.8				95% BCA Bootstrap UTL with 90% Coverage		6.8
445					95% UPL	6.8				90% Percentile		6.24
446					90% Chebyshev UPL	9.384				95% Percentile		6.52
447					95% Chebyshev UPL	11.35				99% Percentile		6.744
448					95% USL	6.8						
449												
450	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
451	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
452	and consists of observations collected from clean unimpacted locations.											
453	The use of USL tends to provide a balance between false positives and false negatives provided the data											
454	represents a background data set and when many onsite observations need to be compared with the BTV.											
455												
456	**Arsenic (10 - 12)**											
457												
458	**General Statistics**											
459					Total Number of Observations	8				Number of Distinct Observations		8
460					Minimum	2.1				First Quartile		3.325
461					Second Largest	4.7				Median		4.3
462					Maximum	5.3				Third Quartile		4.625
463					Mean	3.95				SD		1.074
464					Coefficient of Variation	0.272				Skewness		-0.709
465					Mean of logged Data	1.335				SD of logged Data		0.311
466												
467	**Critical Values for Background Threshold Values (BTVs)**											
468					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
469												
470	**Normal GOF Test**											
471					Shapiro Wilk Test Statistic	0.937	**Shapiro Wilk GOF Test**					
472					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
473					Lilliefors Test Statistic	0.196	**Lilliefors GOF Test**					
474					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
475	**Data appear Normal at 5% Significance Level**											
476												
477	**Background Statistics Assuming Normal Distribution**											
478					95% UTL with 90% Coverage	6.724				90% Percentile (z)		5.327
479					95% UPL (t)	6.109				95% Percentile (z)		5.717
480					95% USL	6.133				99% Percentile (z)		6.449
481												
482	**Gamma GOF Test**											
483					A-D Test Statistic	0.425	**Anderson-Darling Gamma GOF Test**					
484					5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level					
485					K-S Test Statistic	0.217	**Kolmogorov-Smirnov Gamma GOF Test**					
486					5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level					
487	**Detected data appear Gamma Distributed at 5% Significance Level**											
488												
489	**Gamma Statistics**											
490					k hat (MLE)	13.11				k star (bias corrected MLE)		8.276
491					Theta hat (MLE)	0.301				Theta star (bias corrected MLE)		0.477
492					nu hat (MLE)	209.7				nu star (bias corrected)		132.4
493					MLE Mean (bias corrected)	3.95				MLE Sd (bias corrected)		1.373
494												
495	**Background Statistics Assuming Gamma Distribution**											
496					95% Wilson Hilferty (WH) Approx. Gamma UPL	6.648				90% Percentile		5.78
497					95% Hawkins Wixley (HW) Approx. Gamma UPL	6.746				95% Percentile		6.446
498					95% WH Approx. Gamma UTL with 90% Coverage	7.639				99% Percentile		7.822
499					95% HW Approx. Gamma UTL with 90% Coverage	7.814						
500					95% WH USL	6.685				95% HW USL		6.785

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

501											
502	**Lognormal GOF Test**										
503	Shapiro Wilk Test Statistic				0.89	**Shapiro Wilk Lognormal GOF Test**					
504	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
505	Lilliefors Test Statistic				0.221	**Lilliefors Lognormal GOF Test**					
506	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
507	**Data appear Lognormal at 5% Significance Level**										
508											
509	**Background Statistics assuming Lognormal Distribution**										
510	95% UTL with 90% Coverage				8.49	90% Percentile (z)					5.664
511	95% UPL (t)				7.104	95% Percentile (z)					6.342
512	95% USL				7.154	99% Percentile (z)					7.841
513											
514	**Nonparametric Distribution Free Background Statistics**										
515	**Data appear Normal at 5% Significance Level**										
516											
517	**Nonparametric Upper Limits for Background Threshold Values**										
518	Order of Statistic, r				8	95% UTL with 90% Coverage					5.3
519	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
520						Approximate Sample Size needed to achieve specified CC					29
521	95% Percentile Bootstrap UTL with 90% Coverage				5.3	95% BCA Bootstrap UTL with 90% Coverage					5.3
522	95% UPL				5.3	90% Percentile					4.88
523	90% Chebyshev UPL				7.369	95% Percentile					5.09
524	95% Chebyshev UPL				8.917	99% Percentile					5.258
525	95% USL				5.3						
526											
527	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
528	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
529	and consists of observations collected from clean unimpacted locations.										
530	The use of USL tends to provide a balance between false positives and false negatives provided the data										
531	represents a background data set and when many onsite observations need to be compared with the BTV.										
532											
533	**Barium (0 - 0.5)**										
534											
535	**General Statistics**										
536	Total Number of Observations				8	Number of Distinct Observations					7
537	Minimum				195	First Quartile					241
538	Second Largest				429	Median					283.5
539	Maximum				429	Third Quartile					367.5
540	Mean				305.1	SD					88.62
541	Coefficient of Variation				0.29	Skewness					0.508
542	Mean of logged Data				5.684	SD of logged Data					0.288
543											
544	**Critical Values for Background Threshold Values (BTVs)**										
545	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032
546											
547	**Normal GOF Test**										
548	Shapiro Wilk Test Statistic				0.907	**Shapiro Wilk GOF Test**					
549	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level					
550	Lilliefors Test Statistic				0.197	**Lilliefors GOF Test**					
551	5% Lilliefors Critical Value				0.283	Data appear Normal at 5% Significance Level					
552	**Data appear Normal at 5% Significance Level**										
553											
554	**Background Statistics Assuming Normal Distribution**										
555	95% UTL with 90% Coverage				533.9	90% Percentile (z)					418.7
556	95% UPL (t)				483.2	95% Percentile (z)					450.9
557	95% USL				485.2	99% Percentile (z)					511.3
558											
559	**Gamma GOF Test**										
560	A-D Test Statistic				0.307	**Anderson-Darling Gamma GOF Test**					
561	5% A-D Critical Value				0.715	Detected data appear Gamma Distributed at 5% Significance Level					
562	K-S Test Statistic				0.174	**Kolmogorov-Smirnov Gamma GOF Test**					
563	5% K-S Critical Value				0.294	Detected data appear Gamma Distributed at 5% Significance Level					
564	**Detected data appear Gamma Distributed at 5% Significance Level**										
565											
566	**Gamma Statistics**										
567	k hat (MLE)				13.89	k star (bias corrected MLE)					8.762
568	Theta hat (MLE)				21.97	Theta star (bias corrected MLE)					34.82
569	nu hat (MLE)				222.2	nu star (bias corrected)					140.2
570	MLE Mean (bias corrected)				305.1	MLE Sd (bias corrected)					103.1
571											
572	**Background Statistics Assuming Gamma Distribution**										
573	95% Wilson Hilferty (WH) Approx. Gamma UPL				506.8	90% Percentile					442.4
574	95% Hawkins Wixley (HW) Approx. Gamma UPL				510.8	95% Percentile					492.1
575	95% WH Approx. Gamma UTL with 90% Coverage				580.4	99% Percentile					594.5
576	95% HW Approx. Gamma UTL with 90% Coverage				588.7						
577	95% WH USL				509.5	95% HW USL					513.6
578											
579	**Lognormal GOF Test**										
580	Shapiro Wilk Test Statistic				0.939	**Shapiro Wilk Lognormal GOF Test**					
581	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
582	Lilliefors Test Statistic				0.155	**Lilliefors Lognormal GOF Test**					
583	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
584	**Data appear Lognormal at 5% Significance Level**										
585											
586	**Background Statistics assuming Lognormal Distribution**										

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

587				95% UTL with 90% Coverage	618.9					90% Percentile (z)	425.6
588				95% UPL (t)	524.8					95% Percentile (z)	472.5
589				95% USL	528.2					99% Percentile (z)	575
590											
591	**Nonparametric Distribution Free Background Statistics**										
592	**Data appear Normal at 5% Significance Level**										
593											
594	**Nonparametric Upper Limits for Background Threshold Values**										
595				Order of Statistic, r	8					95% UTL with 90% Coverage	429
596				Approx, f used to compute achieved CC	0.889					Approximate Actual Confidence Coefficient achieved by UTL	0.57
597										Approximate Sample Size needed to achieve specified CC	29
598				95% Percentile Bootstrap UTL with 90% Coverage	429					95% BCA Bootstrap UTL with 90% Coverage	429
599				95% UPL	429					90% Percentile	429
600				90% Chebyshev UPL	587.1					95% Percentile	429
601				95% Chebyshev UPL	714.9					99% Percentile	429
602				95% USL	429						
603											
604	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
605	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
606	and consists of observations collected from clean unimpacted locations.										
607	The use of USL tends to provide a balance between false positives and false negatives provided the data										
608	represents a background data set and when many onsite observations need to be compared with the BTV.										
609											
610	**Barium (0.5 - 2)**										
611											
612	**General Statistics**										
613				Total Number of Observations	8					Number of Distinct Observations	8
614				Minimum	120					First Quartile	180
615				Second Largest	305					Median	266.5
616				Maximum	440					Third Quartile	303.5
617				Mean	255.6					SD	101.9
618				Coefficient of Variation	0.399					Skewness	0.492
619				Mean of logged Data	5.47					SD of logged Data	0.42
620											
621	**Critical Values for Background Threshold Values (BTVs)**										
622				Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
623											
624	**Normal GOF Test**										
625				Shapiro Wilk Test Statistic	0.953					**Shapiro Wilk GOF Test**	
626				5% Shapiro Wilk Critical Value	0.818					Data appear Normal at 5% Significance Level	
627				Lilliefors Test Statistic	0.189					**Lilliefors GOF Test**	
628				5% Lilliefors Critical Value	0.283					Data appear Normal at 5% Significance Level	
629	**Data appear Normal at 5% Significance Level**										
630											
631	**Background Statistics Assuming Normal Distribution**										
632				95% UTL with 90% Coverage	518.8					90% Percentile (z)	386.3
633				95% UPL (t)	460.5					95% Percentile (z)	423.3
634				95% USL	462.7					99% Percentile (z)	492.8
635											
636	**Gamma GOF Test**										
637				A-D Test Statistic	0.245					**Anderson-Darling Gamma GOF Test**	
638				5% A-D Critical Value	0.717					Detected data appear Gamma Distributed at 5% Significance Level	
639				K-S Test Statistic	0.172					**Kolmogorov-Smirnov Gamma GOF Test**	
640				5% K-S Critical Value	0.295					Detected data appear Gamma Distributed at 5% Significance Level	
641	**Detected data appear Gamma Distributed at 5% Significance Level**										
642											
643	**Gamma Statistics**										
644				k hat (MLE)	6.932					k star (bias corrected MLE)	4.416
645				Theta hat (MLE)	36.88					Theta star (bias corrected MLE)	57.89
646				nu hat (MLE)	110.9					nu star (bias corrected)	70.66
647				MLE Mean (bias corrected)	255.6					MLE Sd (bias corrected)	121.6
648											
649	**Background Statistics Assuming Gamma Distribution**										
650				95% Wilson Hilferty (WH) Approx. Gamma UPL	506.7					90% Percentile	418.6
651				95% Hawkins Wixley (HW) Approx. Gamma UPL	516					95% Percentile	482.9
652				95% WH Approx. Gamma UTL with 90% Coverage	606.4					99% Percentile	619.5
653				95% HW Approx. Gamma UTL with 90% Coverage	625.2						
654				95% WH USL	510.3					95% HW USL	520
655											
656	**Lognormal GOF Test**										
657				Shapiro Wilk Test Statistic	0.961					**Shapiro Wilk Lognormal GOF Test**	
658				5% Shapiro Wilk Critical Value	0.818					Data appear Lognormal at 5% Significance Level	
659				Lilliefors Test Statistic	0.177					**Lilliefors Lognormal GOF Test**	
660				5% Lilliefors Critical Value	0.283					Data appear Lognormal at 5% Significance Level	
661	**Data appear Lognormal at 5% Significance Level**										
662											
663	**Background Statistics assuming Lognormal Distribution**										
664				95% UTL with 90% Coverage	703.1					90% Percentile (z)	407
665				95% UPL (t)	552.7					95% Percentile (z)	474.1
666				95% USL	557.9					99% Percentile (z)	631.4
667											
668	**Nonparametric Distribution Free Background Statistics**										
669	**Data appear Normal at 5% Significance Level**										
670											
671	**Nonparametric Upper Limits for Background Threshold Values**										
672				Order of Statistic, r	8					95% UTL with 90% Coverage	440

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

673	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
674							Approximate Sample Size needed to achieve specified CC					29
675	95% Percentile Bootstrap UTL with 90% Coverage					440	95% BCA Bootstrap UTL with 90% Coverage					440
676	95% UPL					440	90% Percentile					345.5
677	90% Chebyshev UPL					580	95% Percentile					392.8
678	95% Chebyshev UPL					726.9	99% Percentile					430.6
679	95% USL					440						
680												
681	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
682	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
683	and consists of observations collected from clean unimpacted locations.											
684	The use of USL tends to provide a balance between false positives and false negatives provided the data											
685	represents a background data set and when many onsite observations need to be compared with the BTV.											
686												
687	**Barium (10 - 12)**											
688												
689	**General Statistics**											
690	Total Number of Observations					8	Number of Distinct Observations					8
691	Minimum					30.3	First Quartile					44.58
692	Second Largest					87	Median					64.85
693	Maximum					172	Third Quartile					81.75
694	Mean					73.39	SD					44.27
695	Coefficient of Variation					0.603	Skewness					1.82
696	Mean of logged Data					4.165	SD of logged Data					0.531
697												
698	**Critical Values for Background Threshold Values (BTVs)**											
699	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
700												
701	**Normal GOF Test**											
702	Shapiro Wilk Test Statistic					0.823	**Shapiro Wilk GOF Test**					
703	5% Shapiro Wilk Critical Value					0.818	Data appear Normal at 5% Significance Level					
704	Lilliefors Test Statistic					0.254	**Lilliefors GOF Test**					
705	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
706	**Data appear Normal at 5% Significance Level**											
707												
708	**Background Statistics Assuming Normal Distribution**											
709	95% UTL with 90% Coverage					187.7	90% Percentile (z)					130.1
710	95% UPL (t)					162.3	95% Percentile (z)					146.2
711	95% USL					163.3	99% Percentile (z)					176.4
712												
713	**Gamma GOF Test**											
714	A-D Test Statistic					0.301	**Anderson-Darling Gamma GOF Test**					
715	5% A-D Critical Value					0.719	Detected data appear Gamma Distributed at 5% Significance Level					
716	K-S Test Statistic					0.178	**Kolmogorov-Smirnov Gamma GOF Test**					
717	5% K-S Critical Value					0.295	Detected data appear Gamma Distributed at 5% Significance Level					
718	**Detected data appear Gamma Distributed at 5% Significance Level**											
719												
720	**Gamma Statistics**											
721	k hat (MLE)					3.969	k star (bias corrected MLE)					2.564
722	Theta hat (MLE)					18.49	Theta star (bias corrected MLE)					28.62
723	nu hat (MLE)					63.5	nu star (bias corrected)					41.02
724	MLE Mean (bias corrected)					73.39	MLE Sd (bias corrected)					45.83
725												
726	**Background Statistics Assuming Gamma Distribution**											
727	95% Wilson Hilferty (WH) Approx. Gamma UPL					172.7	90% Percentile					134.8
728	95% Hawkins Wixley (HW) Approx. Gamma UPL					175.3	95% Percentile					161.3
729	95% WH Approx. Gamma UTL with 90% Coverage					215.7	99% Percentile					219.1
730	95% HW Approx. Gamma UTL with 90% Coverage					222.5						
731	95% WH USL					174.2	95% HW USL					177
732												
733	**Lognormal GOF Test**											
734	Shapiro Wilk Test Statistic					0.968	**Shapiro Wilk Lognormal GOF Test**					
735	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
736	Lilliefors Test Statistic					0.16	**Lilliefors Lognormal GOF Test**					
737	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					
738	**Data appear Lognormal at 5% Significance Level**											
739												
740	**Background Statistics assuming Lognormal Distribution**											
741	95% UTL with 90% Coverage					253.3	90% Percentile (z)					127
742	95% UPL (t)					186.9	95% Percentile (z)					154
743	95% USL					189.1	99% Percentile (z)					221.1
744												
745	**Nonparametric Distribution Free Background Statistics**											
746	**Data appear Normal at 5% Significance Level**											
747												
748	**Nonparametric Upper Limits for Background Threshold Values**											
749	Order of Statistic, r					8	95% UTL with 90% Coverage					172
750	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
751							Approximate Sample Size needed to achieve specified CC					29
752	95% Percentile Bootstrap UTL with 90% Coverage					172	95% BCA Bootstrap UTL with 90% Coverage					172
753	95% UPL					172	90% Percentile					112.5
754	90% Chebyshev UPL					214.3	95% Percentile					142.3
755	95% Chebyshev UPL					278.1	99% Percentile					166.1
756	95% USL					172						
757												
758	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

759	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
760	and consists of observations collected from clean unimpacted locations.											
761	The use of USL tends to provide a balance between false positives and false negatives provided the data											
762	represents a background data set and when many onsite observations need to be compared with the BTV.											
763												
764	**Beryllium (0 - 0.5)**											
765												
766	**General Statistics**											
767						Total Number of Observations	8				Number of Distinct Observations	8	
768						Minimum	0.63				First Quartile	0.658	
769						Second Largest	0.98				Median	0.86	
770						Maximum	1.2				Third Quartile	0.973	
771						Mean	0.851				SD	0.205	
772						Coefficient of Variation	0.241				Skewness	0.456	
773						Mean of logged Data	-0.186				SD of logged Data	0.239	
774													
775	**Critical Values for Background Threshold Values (BTVs)**											
776						Tolerance Factor K (For UTL)	2.582				d2max (for USL)	2.032	
777													
778	**Normal GOF Test**											
779						Shapiro Wilk Test Statistic	0.895				**Shapiro Wilk GOF Test**		
780						5% Shapiro Wilk Critical Value	0.818				Data appear Normal at 5% Significance Level		
781						Lilliefors Test Statistic	0.199				**Lilliefors GOF Test**		
782						5% Lilliefors Critical Value	0.283				Data appear Normal at 5% Significance Level		
783	**Data appear Normal at 5% Significance Level**											
784													
785	**Background Statistics Assuming Normal Distribution**											
786					95% UTL with	90% Coverage	1.381				90% Percentile (z)	1.114	
787						95% UPL (t)	1.264				95% Percentile (z)	1.189	
788						95% USL	1.268				99% Percentile (z)	1.329	
789													
790	**Gamma GOF Test**											
791						A-D Test Statistic	0.471				**Anderson-Darling Gamma GOF Test**		
792						5% A-D Critical Value	0.716				Detected data appear Gamma Distributed at 5% Significance Level		
793						K-S Test Statistic	0.221				**Kolmogorov-Smirnov Gamma GOF Test**		
794						5% K-S Critical Value	0.294				Detected data appear Gamma Distributed at 5% Significance Level		
795	**Detected data appear Gamma Distributed at 5% Significance Level**											
796													
797	**Gamma Statistics**											
798						k hat (MLE)	20.07				k star (bias corrected MLE)	12.63	
799						Theta hat (MLE)	0.0424				Theta star (bias corrected MLE)	0.0674	
800						nu hat (MLE)	321.2				nu star (bias corrected)	202.1	
801						MLE Mean (bias corrected)	0.851				MLE Sd (bias corrected)	0.24	
802													
803	**Background Statistics Assuming Gamma Distribution**											
804						95% Wilson Hilferty (WH) Approx. Gamma UPL	1.309				90% Percentile	1.169	
805						95% Hawkins Wixley (HW) Approx. Gamma UPL	1.317				95% Percentile	1.28	
806					95% WH Approx. Gamma UTL with	90% Coverage	1.471				99% Percentile	1.505	
807					95% HW Approx. Gamma UTL with	90% Coverage	1.486						
808						95% WH USL	1.315				95% HW USL	1.323	
809													
810	**Lognormal GOF Test**											
811						Shapiro Wilk Test Statistic	0.896				**Shapiro Wilk Lognormal GOF Test**		
812						5% Shapiro Wilk Critical Value	0.818				Data appear Lognormal at 5% Significance Level		
813						Lilliefors Test Statistic	0.214				**Lilliefors Lognormal GOF Test**		
814						5% Lilliefors Critical Value	0.283				Data appear Lognormal at 5% Significance Level		
815	**Data appear Lognormal at 5% Significance Level**											
816													
817	**Background Statistics assuming Lognormal Distribution**											
818					95% UTL with	90% Coverage	1.539				90% Percentile (z)	1.128	
819						95% UPL (t)	1.342				95% Percentile (z)	1.23	
820						95% USL	1.349				99% Percentile (z)	1.448	
821													
822	**Nonparametric Distribution Free Background Statistics**											
823	**Data appear Normal at 5% Significance Level**											
824													
825	**Nonparametric Upper Limits for Background Threshold Values**											
826						Order of Statistic, r	8				95% UTL with	90% Coverage	1.2
827						Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
828											Approximate Sample Size needed to achieve specified CC		29
829					95% Percentile Bootstrap UTL with	90% Coverage	1.2				95% BCA Bootstrap UTL with	90% Coverage	1.2
830						95% UPL	1.2				90% Percentile		1.046
831						90% Chebyshev UPL	1.504				95% Percentile		1.123
832						95% Chebyshev UPL	1.8				99% Percentile		1.185
833						95% USL	1.2						
834													
835	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
836	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
837	and consists of observations collected from clean unimpacted locations.											
838	The use of USL tends to provide a balance between false positives and false negatives provided the data											
839	represents a background data set and when many onsite observations need to be compared with the BTV.											
840													
841	**Beryllium (0.5 - 2)**											
842													
843	**General Statistics**											
844						Total Number of Observations	8				Number of Distinct Observations	8	

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
845					Minimum	0.35					First Quartile	0.545
846					Second Largest	0.87					Median	0.685
847					Maximum	1.2					Third Quartile	0.825
848					Mean	0.705					SD	0.266
849					Coefficient of Variation	0.377					Skewness	0.67
850					Mean of logged Data	-0.413					SD of logged Data	0.386
851												
852	**Critical Values for Background Threshold Values (BTVs)**											
853					Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
854												
855	**Normal GOF Test**											
856					Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**					
857					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
858					Lilliefors Test Statistic	0.142	**Lilliefors GOF Test**					
859					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
860	**Data appear Normal at 5% Significance Level**											
861												
862	**Background Statistics Assuming Normal Distribution**											
863					95% UTL with 90% Coverage	1.391					90% Percentile (z)	1.046
864					95% UPL (t)	1.239					95% Percentile (z)	1.142
865					95% USL	1.245					99% Percentile (z)	1.324
866												
867	**Gamma GOF Test**											
868					A-D Test Statistic	0.152	**Anderson-Darling Gamma GOF Test**					
869					5% A-D Critical Value	0.717	Detected data appear Gamma Distributed at 5% Significance Level					
870					K-S Test Statistic	0.13	**Kolmogorov-Smirnov Gamma GOF Test**					
871					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
872	**Detected data appear Gamma Distributed at 5% Significance Level**											
873												
874	**Gamma Statistics**											
875					k hat (MLE)	8.054					k star (bias corrected MLE)	5.117
876					Theta hat (MLE)	0.0875					Theta star (bias corrected MLE)	0.138
877					nu hat (MLE)	128.9					nu star (bias corrected)	81.88
878					MLE Mean (bias corrected)	0.705					MLE Sd (bias corrected)	0.312
879												
880	**Background Statistics Assuming Gamma Distribution**											
881					95% Wilson Hilferty (WH) Approx. Gamma UPL	1.34					90% Percentile	1.122
882					95% Hawkins Wixley (HW) Approx. Gamma UPL	1.36					95% Percentile	1.283
883					95% WH Approx. Gamma UTL with 90% Coverage	1.587					99% Percentile	1.623
884					95% HW Approx. Gamma UTL with 90% Coverage	1.627						
885					95% WH USL	1.349					95% HW USL	1.369
886												
887	**Lognormal GOF Test**											
888					Shapiro Wilk Test Statistic	0.988	**Shapiro Wilk Lognormal GOF Test**					
889					5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level					
890					Lilliefors Test Statistic	0.14	**Lilliefors Lognormal GOF Test**					
891					5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level					
892	**Data appear Lognormal at 5% Significance Level**											
893												
894	**Background Statistics assuming Lognormal Distribution**											
895					95% UTL with 90% Coverage	1.791					90% Percentile (z)	1.085
896					95% UPL (t)	1.436					95% Percentile (z)	1.248
897					95% USL	1.448					99% Percentile (z)	1.623
898												
899	**Nonparametric Distribution Free Background Statistics**											
900	**Data appear Normal at 5% Significance Level**											
901												
902	**Nonparametric Upper Limits for Background Threshold Values**											
903					Order of Statistic, r	8					95% UTL with 90% Coverage	1.2
904					Approx, f used to compute achieved CC	0.889					Approximate Actual Confidence Coefficient achieved by UTL	0.57
905											Approximate Sample Size needed to achieve specified CC	29
906					95% Percentile Bootstrap UTL with 90% Coverage	1.2					95% BCA Bootstrap UTL with 90% Coverage	1.2
907					95% UPL	1.2					90% Percentile	0.969
908					90% Chebyshev UPL	1.551					95% Percentile	1.085
909					95% Chebyshev UPL	1.934					99% Percentile	1.177
910					95% USL	1.2						
911												
912	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
913	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
914	and consists of observations collected from clean unimpacted locations.											
915	The use of USL tends to provide a balance between false positives and false negatives provided the data											
916	represents a background data set and when many onsite observations need to be compared with the BTV.											
917												
918	**Beryllium (10 - 12)**											
919												
920	**General Statistics**											
921					Total Number of Observations	8					Number of Distinct Observations	7
922					Minimum	0.22					First Quartile	0.285
923					Second Largest	0.48					Median	0.35
924					Maximum	0.49					Third Quartile	0.398
925					Mean	0.35					SD	0.0994
926					Coefficient of Variation	0.284					Skewness	0.251
927					Mean of logged Data	-1.086					SD of logged Data	0.291
928												
929	**Critical Values for Background Threshold Values (BTVs)**											
930					Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

931											
932	**Normal GOF Test**										
933	Shapiro Wilk Test Statistic				0.931	**Shapiro Wilk GOF Test**					
934	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level					
935	Lilliefors Test Statistic				0.17	**Lilliefors GOF Test**					
936	5% Lilliefors Critical Value				0.283	Data appear Normal at 5% Significance Level					
937	**Data appear Normal at 5% Significance Level**										
938											
939	**Background Statistics Assuming Normal Distribution**										
940	95% UTL with 90% Coverage				0.607	90% Percentile (z)					0.477
941	95% UPL (t)				0.55	95% Percentile (z)					0.514
942	95% USL				0.552	99% Percentile (z)					0.581
943											
944	**Gamma GOF Test**										
945	A-D Test Statistic				0.27	**Anderson-Darling Gamma GOF Test**					
946	5% A-D Critical Value				0.715	Detected data appear Gamma Distributed at 5% Significance Level					
947	K-S Test Statistic				0.158	**Kolmogorov-Smirnov Gamma GOF Test**					
948	5% K-S Critical Value				0.294	Detected data appear Gamma Distributed at 5% Significance Level					
949	**Detected data appear Gamma Distributed at 5% Significance Level**										
950											
951	**Gamma Statistics**										
952	k hat (MLE)				13.9	k star (bias corrected MLE)					8.774
953	Theta hat (MLE)				0.0252	Theta star (bias corrected MLE)					0.0399
954	nu hat (MLE)				222.5	nu star (bias corrected)					140.4
955	MLE Mean (bias corrected)				0.35	MLE Sd (bias corrected)					0.118
956											
957	**Background Statistics Assuming Gamma Distribution**										
958	95% Wilson Hilferty (WH) Approx. Gamma UPL				0.581	90% Percentile					0.507
959	95% Hawkins Wixley (HW) Approx. Gamma UPL				0.587	95% Percentile					0.564
960	95% WH Approx. Gamma UTL with 90% Coverage				0.666	99% Percentile					0.682
961	95% HW Approx. Gamma UTL with 90% Coverage				0.676						
962	95% WH USL				0.584	95% HW USL					0.59
963											
964	**Lognormal GOF Test**										
965	Shapiro Wilk Test Statistic				0.94	**Shapiro Wilk Lognormal GOF Test**					
966	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
967	Lilliefors Test Statistic				0.137	**Lilliefors Lognormal GOF Test**					
968	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
969	**Data appear Lognormal at 5% Significance Level**										
970											
971	**Background Statistics assuming Lognormal Distribution**										
972	95% UTL with 90% Coverage				0.716	90% Percentile (z)					0.49
973	95% UPL (t)				0.606	95% Percentile (z)					0.545
974	95% USL				0.61	99% Percentile (z)					0.665
975											
976	**Nonparametric Distribution Free Background Statistics**										
977	**Data appear Normal at 5% Significance Level**										
978											
979	**Nonparametric Upper Limits for Background Threshold Values**										
980	Order of Statistic, r				8	95% UTL with 90% Coverage					0.49
981	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
982						Approximate Sample Size needed to achieve specified CC					29
983	95% Percentile Bootstrap UTL with 90% Coverage				0.49	95% BCA Bootstrap UTL with 90% Coverage					0.49
984	95% UPL				0.49	90% Percentile					0.483
985	90% Chebyshev UPL				0.666	95% Percentile					0.487
986	95% Chebyshev UPL				0.81	99% Percentile					0.489
987	95% USL				0.49						
988											
989	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
990	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
991	and consists of observations collected from clean unimpacted locations.										
992	The use of USL tends to provide a balance between false positives and false negatives provided the data										
993	represents a background data set and when many onsite observations need to be compared with the BTV.										
994											
995	**Cadmium (0 - 0.5)**										
996											
997	**General Statistics**										
998	Total Number of Observations				8	Number of Missing Observations					0
999	Number of Distinct Observations				6						
1000	Number of Detects				0	Number of Non-Detects					8
1001	Number of Distinct Detects				0	Number of Distinct Non-Detects					6
1002	Minimum Detect				N/A	Minimum Non-Detect					0.26
1003	Maximum Detect				N/A	Maximum Non-Detect					0.38
1004	Variance Detected				N/A	Percent Non-Detects					100%
1005	Mean Detected				N/A	SD Detected					N/A
1006	Mean of Detected Logged Data				N/A	SD of Detected Logged Data					N/A
1007											
1008	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
1009	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
1010	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
1011											
1012	**The data set for variable Cadmium (0 - 0.5) was not processed!**										
1013											
1014											
1015	**Cadmium (0.5 - 2)**										
1016											

Preliminary Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1017	**General Statistics**										
1018	Total Number of Observations				8	Number of Missing Observations					0
1019	Number of Distinct Observations				6						
1020	Number of Detects				0	Number of Non-Detects					8
1021	Number of Distinct Detects				0	Number of Distinct Non-Detects					6
1022	Minimum Detect				N/A	Minimum Non-Detect					0.27
1023	Maximum Detect				N/A	Maximum Non-Detect					0.39
1024	Variance Detected				N/A	Percent Non-Detects					100%
1025	Mean Detected				N/A	SD Detected					N/A
1026	Mean of Detected Logged Data				N/A	SD of Detected Logged Data					N/A
1027											
1028	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
1029	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
1030	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
1031											
1032	**The data set for variable Cadmium (0.5 - 2) was not processed!**										
1033											
1034											
1035	**Cadmium (10 - 12)**										
1036											
1037	**General Statistics**										
1038	Total Number of Observations				8	Number of Missing Observations					0
1039	Number of Distinct Observations				4						
1040	Number of Detects				0	Number of Non-Detects					8
1041	Number of Distinct Detects				0	Number of Distinct Non-Detects					4
1042	Minimum Detect				N/A	Minimum Non-Detect					0.24
1043	Maximum Detect				N/A	Maximum Non-Detect					0.27
1044	Variance Detected				N/A	Percent Non-Detects					100%
1045	Mean Detected				N/A	SD Detected					N/A
1046	Mean of Detected Logged Data				N/A	SD of Detected Logged Data					N/A
1047											
1048	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
1049	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
1050	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
1051											
1052	**The data set for variable Cadmium (10 - 12) was not processed!**										
1053											
1054											
1055	**Calcium (0 - 0.5)**										
1056											
1057	**General Statistics**										
1058	Total Number of Observations				8	Number of Distinct Observations					8
1059	Minimum				2570	First Quartile					3465
1060	Second Largest				6000	Median					4530
1061	Maximum				17200	Third Quartile					5888
1062	Mean				5938	SD					4730
1063	Coefficient of Variation				0.797	Skewness					2.423
1064	Mean of logged Data				8.505	SD of logged Data					0.589
1065											
1066	**Critical Values for Background Threshold Values (BTVs)**										
1067	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032
1068											
1069	**Normal GOF Test**										
1070	Shapiro Wilk Test Statistic				0.666	**Shapiro Wilk GOF Test**					
1071	5% Shapiro Wilk Critical Value				0.818	Data Not Normal at 5% Significance Level					
1072	Lilliefors Test Statistic				0.37	**Lilliefors GOF Test**					
1073	5% Lilliefors Critical Value				0.283	Data Not Normal at 5% Significance Level					
1074	**Data Not Normal at 5% Significance Level**										
1075											
1076	**Background Statistics Assuming Normal Distribution**										
1077	95% UTL with 90% Coverage				18149	90% Percentile (z)					11999
1078	95% UPL (t)				15441	95% Percentile (z)					13717
1079	95% USL				15546	99% Percentile (z)					16940
1080											
1081	**Gamma GOF Test**										
1082	A-D Test Statistic				0.735	**Anderson-Darling Gamma GOF Test**					
1083	5% A-D Critical Value				0.722	Data Not Gamma Distributed at 5% Significance Level					
1084	K-S Test Statistic				0.29	**Kolmogorov-Smirnov Gamma GOF Test**					
1085	5% K-S Critical Value				0.296	Detected data appear Gamma Distributed at 5% Significance Level					
1086	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**										
1087											
1088	**Gamma Statistics**										
1089	k hat (MLE)				2.877	k star (bias corrected MLE)					1.882
1090	Theta hat (MLE)				2063	Theta star (bias corrected MLE)					3155
1091	nu hat (MLE)				46.04	nu star (bias corrected)					30.11
1092	MLE Mean (bias corrected)				5938	MLE Sd (bias corrected)					4328
1093											
1094	**Background Statistics Assuming Gamma Distribution**										
1095	95% Wilson Hilferty (WH) Approx. Gamma UPL				15559	90% Percentile					11715
1096	95% Hawkins Wixley (HW) Approx. Gamma UPL				15653	95% Percentile					14359
1097	95% WH Approx. Gamma UTL with 90% Coverage				19982	99% Percentile					20246
1098	95% HW Approx. Gamma UTL with 90% Coverage				20457						
1099	95% WH USL				15717	95% HW USL					15821
1100											
1101	**Lognormal GOF Test**										
1102	Shapiro Wilk Test Statistic				0.866	**Shapiro Wilk Lognormal GOF Test**					

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1103	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
1104	Lilliefors Test Statistic					0.246	**Lilliefors Lognormal GOF Test**					
1105	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					
1106	**Data appear Lognormal at 5% Significance Level**											
1107												
1108	**Background Statistics assuming Lognormal Distribution**											
1109	95% UTL with 90% Coverage					22629	90% Percentile (z)					10515
1110	95% UPL (t)					16149	95% Percentile (z)					13026
1111	95% USL					16361	99% Percentile (z)					19464
1112												
1113	**Nonparametric Distribution Free Background Statistics**											
1114	**Data appear Approximate Gamma Distribution at 5% Significance Level**											
1115												
1116	**Nonparametric Upper Limits for Background Threshold Values**											
1117	Order of Statistic, r					8	95% UTL with 90% Coverage					17200
1118	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
1119							Approximate Sample Size needed to achieve specified CC					29
1120	95% Percentile Bootstrap UTL with 90% Coverage					17200	95% BCA Bootstrap UTL with 90% Coverage					17200
1121	95% UPL					17200	90% Percentile					9360
1122	90% Chebyshev UPL					20987	95% Percentile					13280
1123	95% Chebyshev UPL					27804	99% Percentile					16416
1124	95% USL					17200						
1125												
1126	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample starts exceeding 20.											
1127	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1128	and consists of observations collected from clean unimpacted locations.											
1129	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1130	represents a background data set and when many onsite observations need to be compared with the BTV.											
1131												
1132	**Calcium (0.5 - 2)**											
1133												
1134	**General Statistics**											
1135	Total Number of Observations					8	Number of Distinct Observations					8
1136	Minimum					1830	First Quartile					2873
1137	Second Largest					5820	Median					3375
1138	Maximum					10900	Third Quartile					5003
1139	Mean					4430	SD					2907
1140	Coefficient of Variation					0.656	Skewness					1.876
1141	Mean of logged Data					8.247	SD of logged Data					0.559
1142												
1143	**Critical Values for Background Threshold Values (BTVs)**											
1144	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
1145												
1146	**Normal GOF Test**											
1147	Shapiro Wilk Test Statistic					0.805	**Shapiro Wilk GOF Test**					
1148	5% Shapiro Wilk Critical Value					0.818	Data Not Normal at 5% Significance Level					
1149	Lilliefors Test Statistic					0.237	**Lilliefors GOF Test**					
1150	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
1151	**Data appear Approximate Normal at 5% Significance Level**											
1152												
1153	**Background Statistics Assuming Normal Distribution**											
1154	95% UTL with 90% Coverage					11935	90% Percentile (z)					8155
1155	95% UPL (t)					10271	95% Percentile (z)					9211
1156	95% USL					10336	99% Percentile (z)					11192
1157												
1158	**Gamma GOF Test**											
1159	A-D Test Statistic					0.35	**Anderson-Darling Gamma GOF Test**					
1160	5% A-D Critical Value					0.72	Detected data appear Gamma Distributed at 5% Significance Level					
1161	K-S Test Statistic					0.202	**Kolmogorov-Smirnov Gamma GOF Test**					
1162	5% K-S Critical Value					0.296	Detected data appear Gamma Distributed at 5% Significance Level					
1163	**Detected data appear Gamma Distributed at 5% Significance Level**											
1164												
1165	**Gamma Statistics**											
1166	k hat (MLE)					3.503	k star (bias corrected MLE)					2.273
1167	Theta hat (MLE)					1265	Theta star (bias corrected MLE)					1949
1168	nu hat (MLE)					56.05	nu star (bias corrected)					36.36
1169	MLE Mean (bias corrected)					4430	MLE Sd (bias corrected)					2939
1170												
1171	**Background Statistics Assuming Gamma Distribution**											
1172	95% Wilson Hilferty (WH) Approx. Gamma UPL					10873	90% Percentile					8363
1173	95% Hawkins Wixley (HW) Approx. Gamma UPL					11031	95% Percentile					10097
1174	95% WH Approx. Gamma UTL with 90% Coverage					13727	99% Percentile					13913
1175	95% HW Approx. Gamma UTL with 90% Coverage					14165						
1176	95% WH USL					10975	95% HW USL					11142
1177												
1178	**Lognormal GOF Test**											
1179	Shapiro Wilk Test Statistic					0.961	**Shapiro Wilk Lognormal GOF Test**					
1180	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
1181	Lilliefors Test Statistic					0.166	**Lilliefors Lognormal GOF Test**					
1182	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					
1183	**Data appear Lognormal at 5% Significance Level**											
1184												
1185	**Background Statistics assuming Lognormal Distribution**											
1186	95% UTL with 90% Coverage					16141	90% Percentile (z)					7806
1187	95% UPL (t)					11723	95% Percentile (z)					9562
1188	95% USL					11869	99% Percentile (z)					13993

Preliminary Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1189												
1190	**Nonparametric Distribution Free Background Statistics**											
1191	**Data appear Approximate Normal at 5% Significance Level**											
1192												
1193	**Nonparametric Upper Limits for Background Threshold Values**											
1194					Order of Statistic, r	8				95% UTL with 90% Coverage		10900
1195					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
1196										Approximate Sample Size needed to achieve specified CC		29
1197					95% Percentile Bootstrap UTL with 90% Coverage	10900				95% BCA Bootstrap UTL with 90% Coverage		10900
1198					95% UPL	10900				90% Percentile		7344
1199					90% Chebyshev UPL	13679				95% Percentile		9122
1200					95% Chebyshev UPL	17869				99% Percentile		10544
1201					95% USL	10900						
1202												
1203	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1204	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1205	and consists of observations collected from clean unimpacted locations.											
1206	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1207	represents a background data set and when many onsite observations need to be compared with the BTV.											
1208												
1209	**Calcium (10 - 12)**											
1210												
1211	**General Statistics**											
1212					Total Number of Observations	8				Number of Distinct Observations		8
1213					Minimum	9280				First Quartile		9390
1214					Second Largest	29200				Median		14500
1215					Maximum	32300				Third Quartile		20125
1216					Mean	16950				SD		9057
1217					Coefficient of Variation	0.534				Skewness		1.047
1218					Mean of logged Data	9.624				SD of logged Data		0.498
1219												
1220	**Critical Values for Background Threshold Values (BTVs)**											
1221					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
1222												
1223	**Normal GOF Test**											
1224					Shapiro Wilk Test Statistic	0.819				**Shapiro Wilk GOF Test**		
1225					5% Shapiro Wilk Critical Value	0.818				Data appear Normal at 5% Significance Level		
1226					Lilliefors Test Statistic	0.243				**Lilliefors GOF Test**		
1227					5% Lilliefors Critical Value	0.283				Data appear Normal at 5% Significance Level		
1228	**Data appear Normal at 5% Significance Level**											
1229												
1230	**Background Statistics Assuming Normal Distribution**											
1231					95% UTL with 90% Coverage	40335				90% Percentile (z)		28557
1232					95% UPL (t)	35150				95% Percentile (z)		31847
1233					95% USL	35350				99% Percentile (z)		38019
1234												
1235	**Gamma GOF Test**											
1236					A-D Test Statistic	0.543				**Anderson-Darling Gamma GOF Test**		
1237					5% A-D Critical Value	0.719				Detected data appear Gamma Distributed at 5% Significance Level		
1238					K-S Test Statistic	0.211				**Kolmogorov-Smirnov Gamma GOF Test**		
1239					5% K-S Critical Value	0.295				Detected data appear Gamma Distributed at 5% Significance Level		
1240	**Detected data appear Gamma Distributed at 5% Significance Level**											
1241												
1242	**Gamma Statistics**											
1243					k hat (MLE)	4.553				k star (bias corrected MLE)		2.929
1244					Theta hat (MLE)	3723				Theta star (bias corrected MLE)		5787
1245					nu hat (MLE)	72.84				nu star (bias corrected)		46.86
1246					MLE Mean (bias corrected)	16950				MLE Sd (bias corrected)		9904
1247												
1248	**Background Statistics Assuming Gamma Distribution**											
1249					95% Wilson Hilferty (WH) Approx. Gamma UPL	38185				90% Percentile		30229
1250					95% Hawkins Wixley (HW) Approx. Gamma UPL	38795				95% Percentile		35818
1251					95% WH Approx. Gamma UTL with 90% Coverage	47181				99% Percentile		47949
1252					95% HW Approx. Gamma UTL with 90% Coverage	48647						
1253					95% WH USL	38510				95% HW USL		39145
1254												
1255	**Lognormal GOF Test**											
1256					Shapiro Wilk Test Statistic	0.869				**Shapiro Wilk Lognormal GOF Test**		
1257					5% Shapiro Wilk Critical Value	0.818				Data appear Lognormal at 5% Significance Level		
1258					Lilliefors Test Statistic	0.204				**Lilliefors Lognormal GOF Test**		
1259					5% Lilliefors Critical Value	0.283				Data appear Lognormal at 5% Significance Level		
1260	**Data appear Lognormal at 5% Significance Level**											
1261												
1262	**Background Statistics assuming Lognormal Distribution**											
1263					95% UTL with 90% Coverage	54771				90% Percentile (z)		28648
1264					95% UPL (t)	41176				95% Percentile (z)		34334
1265					95% USL	41633				99% Percentile (z)		48219
1266												
1267	**Nonparametric Distribution Free Background Statistics**											
1268	**Data appear Normal at 5% Significance Level**											
1269												
1270	**Nonparametric Upper Limits for Background Threshold Values**											
1271					Order of Statistic, r	8				95% UTL with 90% Coverage		32300
1272					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
1273										Approximate Sample Size needed to achieve specified CC		29
1274					95% Percentile Bootstrap UTL with 90% Coverage	32300				95% BCA Bootstrap UTL with 90% Coverage		32300

Preliminary Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1275					95% UPL	32300				90% Percentile		30130
1276					90% Chebyshev UPL	45769				95% Percentile		31215
1277					95% Chebyshev UPL	58823				99% Percentile		32083
1278					95% USL	32300						
1279												
1280	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1281	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1282	and consists of observations collected from clean unimpacted locations.											
1283	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1284	represents a background data set and when many onsite observations need to be compared with the BTV.											
1285												
1286	**Chromium (0 - 0.5)**											
1287												
1288	**General Statistics**											
1289					Total Number of Observations	8				Number of Distinct Observations		8
1290					Minimum	5.4				First Quartile		10.83
1291					Second Largest	16.9				Median		14.3
1292					Maximum	18.3				Third Quartile		15.85
1293					Mean	13.23				SD		4.224
1294					Coefficient of Variation	0.319				Skewness		-0.812
1295					Mean of logged Data	2.523				SD of logged Data		0.396
1296												
1297	**Critical Values for Background Threshold Values (BTVs)**											
1298					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
1299												
1300	**Normal GOF Test**											
1301					Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**					
1302					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
1303					Lilliefors Test Statistic	0.188	**Lilliefors GOF Test**					
1304					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
1305	**Data appear Normal at 5% Significance Level**											
1306												
1307	**Background Statistics Assuming Normal Distribution**											
1308				95% UTL with	90% Coverage	24.13				90% Percentile (z)		18.64
1309					95% UPL (t)	21.71				95% Percentile (z)		20.17
1310					95% USL	21.81				99% Percentile (z)		23.05
1311												
1312	**Gamma GOF Test**											
1313					A-D Test Statistic	0.413	**Anderson-Darling Gamma GOF Test**					
1314					5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level					
1315					K-S Test Statistic	0.209	**Kolmogorov-Smirnov Gamma GOF Test**					
1316					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
1317	**Detected data appear Gamma Distributed at 5% Significance Level**											
1318												
1319	**Gamma Statistics**											
1320					k hat (MLE)	8.669				k star (bias corrected MLE)		5.501
1321					Theta hat (MLE)	1.526				Theta star (bias corrected MLE)		2.404
1322					nu hat (MLE)	138.7				nu star (bias corrected)		88.02
1323					MLE Mean (bias corrected)	13.23				MLE Sd (bias corrected)		5.638
1324												
1325	**Background Statistics Assuming Gamma Distribution**											
1326					95% Wilson Hilferty (WH) Approx. Gamma UPL	24.65				90% Percentile		20.77
1327					95% Hawkins Wixley (HW) Approx. Gamma UPL	25.24				95% Percentile		23.65
1328				95% WH Approx. Gamma UTL with	90% Coverage	29.05				99% Percentile		29.72
1329				95% HW Approx. Gamma UTL with	90% Coverage	30.11						
1330					95% WH USL	24.81				95% HW USL		25.42
1331												
1332	**Lognormal GOF Test**											
1333					Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk Lognormal GOF Test**					
1334					5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level					
1335					Lilliefors Test Statistic	0.197	**Lilliefors Lognormal GOF Test**					
1336					5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level					
1337	**Data appear Lognormal at 5% Significance Level**											
1338												
1339	**Background Statistics assuming Lognormal Distribution**											
1340				95% UTL with	90% Coverage	34.63				90% Percentile (z)		20.7
1341					95% UPL (t)	27.61				95% Percentile (z)		23.9
1342					95% USL	27.86				99% Percentile (z)		31.3
1343												
1344	**Nonparametric Distribution Free Background Statistics**											
1345	**Data appear Normal at 5% Significance Level**											
1346												
1347	**Nonparametric Upper Limits for Background Threshold Values**											
1348					Order of Statistic, r	8				95% UTL with	90% Coverage	18.3
1349					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
1350										Approximate Sample Size needed to achieve specified CC		29
1351				95% Percentile Bootstrap UTL with	90% Coverage	18.3				95% BCA Bootstrap UTL with	90% Coverage	18.3
1352					95% UPL	18.3				90% Percentile		17.32
1353					90% Chebyshev UPL	26.67				95% Percentile		17.81
1354					95% Chebyshev UPL	32.75				99% Percentile		18.2
1355					95% USL	18.3						
1356												
1357	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1358	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1359	and consists of observations collected from clean unimpacted locations.											
1360	The use of USL tends to provide a balance between false positives and false negatives provided the data											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1361	represents a background data set and when many onsite observations need to be compared with the BTV.											
1362												
1363	**Chromium (0.5 - 2)**											
1364												
1365	**General Statistics**											
1366					Total Number of Observations	8				Number of Distinct Observations		8
1367					Minimum	4.9				First Quartile		10.55
1368					Second Largest	16.3				Median		12.5
1369					Maximum	20.9				Third Quartile		15.55
1370					Mean	12.9				SD		4.814
1371					Coefficient of Variation	0.373				Skewness		0.0268
1372					Mean of logged Data	2.484				SD of logged Data		0.436
1373												
1374	**Critical Values for Background Threshold Values (BTVs)**											
1375					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
1376												
1377	**Normal GOF Test**											
1378					Shapiro Wilk Test Statistic	0.979				**Shapiro Wilk GOF Test**		
1379					5% Shapiro Wilk Critical Value	0.818				Data appear Normal at 5% Significance Level		
1380					Lilliefors Test Statistic	0.155				**Lilliefors GOF Test**		
1381					5% Lilliefors Critical Value	0.283				Data appear Normal at 5% Significance Level		
1382	**Data appear Normal at 5% Significance Level**											
1383												
1384	**Background Statistics Assuming Normal Distribution**											
1385					95% UTL with 90% Coverage	25.33				90% Percentile (z)		19.07
1386					95% UPL (t)	22.57				95% Percentile (z)		20.82
1387					95% USL	22.68				99% Percentile (z)		24.1
1388												
1389	**Gamma GOF Test**											
1390					A-D Test Statistic	0.28				**Anderson-Darling Gamma GOF Test**		
1391					5% A-D Critical Value	0.717				Detected data appear Gamma Distributed at 5% Significance Level		
1392					K-S Test Statistic	0.187				**Kolmogorov-Smirnov Gamma GOF Test**		
1393					5% K-S Critical Value	0.295				Detected data appear Gamma Distributed at 5% Significance Level		
1394	**Detected data appear Gamma Distributed at 5% Significance Level**											
1395												
1396	**Gamma Statistics**											
1397					k hat (MLE)	6.963				k star (bias corrected MLE)		4.435
1398					Theta hat (MLE)	1.853				Theta star (bias corrected MLE)		2.909
1399					nu hat (MLE)	111.4				nu star (bias corrected)		70.96
1400					MLE Mean (bias corrected)	12.9				MLE Sd (bias corrected)		6.125
1401												
1402	**Background Statistics Assuming Gamma Distribution**											
1403					95% Wilson Hilferty (WH) Approx. Gamma UPL	25.53				90% Percentile		21.11
1404					95% Hawkins Wixley (HW) Approx. Gamma UPL	26.17				95% Percentile		24.34
1405					95% WH Approx. Gamma UTL with 90% Coverage	30.54				99% Percentile		31.21
1406					95% HW Approx. Gamma UTL with 90% Coverage	31.73						
1407					95% WH USL	25.72				95% HW USL		26.37
1408												
1409	**Lognormal GOF Test**											
1410					Shapiro Wilk Test Statistic	0.914				**Shapiro Wilk Lognormal GOF Test**		
1411					5% Shapiro Wilk Critical Value	0.818				Data appear Lognormal at 5% Significance Level		
1412					Lilliefors Test Statistic	0.222				**Lilliefors Lognormal GOF Test**		
1413					5% Lilliefors Critical Value	0.283				Data appear Lognormal at 5% Significance Level		
1414	**Data appear Lognormal at 5% Significance Level**											
1415												
1416	**Background Statistics assuming Lognormal Distribution**											
1417					95% UTL with 90% Coverage	36.99				90% Percentile (z)		20.97
1418					95% UPL (t)	28.81				95% Percentile (z)		24.57
1419					95% USL	29.09				99% Percentile (z)		33.08
1420												
1421	**Nonparametric Distribution Free Background Statistics**											
1422	**Data appear Normal at 5% Significance Level**											
1423												
1424	**Nonparametric Upper Limits for Background Threshold Values**											
1425					Order of Statistic, r	8				95% UTL with 90% Coverage		20.9
1426					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
1427										Approximate Sample Size needed to achieve specified CC		29
1428					95% Percentile Bootstrap UTL with 90% Coverage	20.9				95% BCA Bootstrap UTL with 90% Coverage		20.9
1429					95% UPL	20.9				90% Percentile		17.68
1430					90% Chebyshev UPL	28.22				95% Percentile		19.29
1431					95% Chebyshev UPL	35.16				99% Percentile		20.58
1432					95% USL	20.9						
1433												
1434	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1435	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1436	and consists of observations collected from clean unimpacted locations.											
1437	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1438	represents a background data set and when many onsite observations need to be compared with the BTV.											
1439												
1440	**Chromium (10 - 12)**											
1441												
1442	**General Statistics**											
1443					Total Number of Observations	8				Number of Distinct Observations		8
1444					Minimum	6.3				First Quartile		7.15
1445					Second Largest	14				Median		9.6
1446					Maximum	21.3				Third Quartile		11.75

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1447					Mean	10.73					SD	4.969
1448					Coefficient of Variation	0.463					Skewness	1.587
1449					Mean of logged Data	2.294					SD of logged Data	0.409
1450												
1451	**Critical Values for Background Threshold Values (BTVs)**											
1452					Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
1453												
1454	**Normal GOF Test**											
1455					Shapiro Wilk Test Statistic	0.842	**Shapiro Wilk GOF Test**					
1456					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
1457					Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**					
1458					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
1459	**Data appear Normal at 5% Significance Level**											
1460												
1461	**Background Statistics Assuming Normal Distribution**											
1462					95% UTL with 90% Coverage	23.56					90% Percentile (z)	17.09
1463					95% UPL (t)	20.71					95% Percentile (z)	18.9
1464					95% USL	20.82					99% Percentile (z)	22.29
1465												
1466	**Gamma GOF Test**											
1467					A-D Test Statistic	0.354	**Anderson-Darling Gamma GOF Test**					
1468					5% A-D Critical Value	0.718	Detected data appear Gamma Distributed at 5% Significance Level					
1469					K-S Test Statistic	0.172	**Kolmogorov-Smirnov Gamma GOF Test**					
1470					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
1471	**Detected data appear Gamma Distributed at 5% Significance Level**											
1472												
1473	**Gamma Statistics**											
1474					k hat (MLE)	6.492					k star (bias corrected MLE)	4.141
1475					Theta hat (MLE)	1.652					Theta star (bias corrected MLE)	2.59
1476					nu hat (MLE)	103.9					nu star (bias corrected)	66.26
1477					MLE Mean (bias corrected)	10.73					MLE Sd (bias corrected)	5.27
1478												
1479	**Background Statistics Assuming Gamma Distribution**											
1480					95% Wilson Hilferty (WH) Approx. Gamma UPL	21.62					90% Percentile	17.79
1481					95% Hawkins Wixley (HW) Approx. Gamma UPL	21.82					95% Percentile	20.6
1482					95% WH Approx. Gamma UTL with 90% Coverage	26					99% Percentile	26.6
1483					95% HW Approx. Gamma UTL with 90% Coverage	26.51						
1484					95% WH USL	21.78					95% HW USL	21.98
1485												
1486	**Lognormal GOF Test**											
1487					Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk Lognormal GOF Test**					
1488					5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level					
1489					Lilliefors Test Statistic	0.149	**Lilliefors Lognormal GOF Test**					
1490					5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level					
1491	**Data appear Lognormal at 5% Significance Level**											
1492												
1493	**Background Statistics assuming Lognormal Distribution**											
1494					95% UTL with 90% Coverage	28.5					90% Percentile (z)	16.74
1495					95% UPL (t)	22.55					95% Percentile (z)	19.42
1496					95% USL	22.75					99% Percentile (z)	25.67
1497												
1498	**Nonparametric Distribution Free Background Statistics**											
1499	**Data appear Normal at 5% Significance Level**											
1500												
1501	**Nonparametric Upper Limits for Background Threshold Values**											
1502					Order of Statistic, r	8					95% UTL with 90% Coverage	21.3
1503					Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
1504							Approximate Sample Size needed to achieve specified CC					29
1505					95% Percentile Bootstrap UTL with 90% Coverage	21.3	95% BCA Bootstrap UTL with 90% Coverage					21.3
1506					95% UPL	21.3	90% Percentile					16.19
1507					90% Chebyshev UPL	26.54	95% Percentile					18.75
1508					95% Chebyshev UPL	33.7	99% Percentile					20.79
1509					95% USL	21.3						
1510												
1511	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1512	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1513	and consists of observations collected from clean unimpacted locations.											
1514	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1515	represents a background data set and when many onsite observations need to be compared with the BTV.											
1516												
1517	**Cobalt (0 - 0.5)**											
1518												
1519	**General Statistics**											
1520					Total Number of Observations	8					Number of Distinct Observations	7
1521					Minimum	2.9					First Quartile	6.025
1522					Second Largest	7					Median	6.15
1523					Maximum	7.2					Third Quartile	6.55
1524					Mean	5.963					SD	1.326
1525					Coefficient of Variation	0.222					Skewness	-2.095
1526					Mean of logged Data	1.755					SD of logged Data	0.288
1527												
1528	**Critical Values for Background Threshold Values (BTVs)**											
1529					Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
1530												
1531	**Normal GOF Test**											
1532					Shapiro Wilk Test Statistic	0.751	**Shapiro Wilk GOF Test**					

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1533	5% Shapiro Wilk Critical Value					0.818	Data Not Normal at 5% Significance Level					
1534	Lilliefors Test Statistic					0.326	**Lilliefors GOF Test**					
1535	5% Lilliefors Critical Value					0.283	Data Not Normal at 5% Significance Level					
1536	**Data Not Normal at 5% Significance Level**											
1537												
1538	**Background Statistics Assuming Normal Distribution**											
1539	95% UTL with 90% Coverage					9.385	90% Percentile (z)					7.661
1540	95% UPL (t)					8.626	95% Percentile (z)					8.143
1541	95% USL					8.655	99% Percentile (z)					9.046
1542												
1543	**Gamma GOF Test**											
1544	A-D Test Statistic					1.17	**Anderson-Darling Gamma GOF Test**					
1545	5% A-D Critical Value					0.716	Data Not Gamma Distributed at 5% Significance Level					
1546	K-S Test Statistic					0.363	**Kolmogorov-Smirnov Gamma GOF Test**					
1547	5% K-S Critical Value					0.294	Data Not Gamma Distributed at 5% Significance Level					
1548	**Data Not Gamma Distributed at 5% Significance Level**											
1549												
1550	**Gamma Statistics**											
1551	k hat (MLE)					16.56	k star (bias corrected MLE)					10.44
1552	Theta hat (MLE)					0.36	Theta star (bias corrected MLE)					0.571
1553	nu hat (MLE)					265	nu star (bias corrected)					167
1554	MLE Mean (bias corrected)					5.963	MLE Sd (bias corrected)					1.846
1555												
1556	**Background Statistics Assuming Gamma Distribution**											
1557	95% Wilson Hilferty (WH) Approx. Gamma UPL					9.532	90% Percentile					8.416
1558	95% Hawkins Wixley (HW) Approx. Gamma UPL					9.699	95% Percentile					9.287
1559	95% WH Approx. Gamma UTL with 90% Coverage					10.81	99% Percentile					11.07
1560	95% HW Approx. Gamma UTL with 90% Coverage					11.09						
1561	95% WH USL					9.579	95% HW USL					9.75
1562												
1563	**Lognormal GOF Test**											
1564	Shapiro Wilk Test Statistic					0.659	**Shapiro Wilk Lognormal GOF Test**					
1565	5% Shapiro Wilk Critical Value					0.818	Data Not Lognormal at 5% Significance Level					
1566	Lilliefors Test Statistic					0.379	**Lilliefors Lognormal GOF Test**					
1567	5% Lilliefors Critical Value					0.283	Data Not Lognormal at 5% Significance Level					
1568	**Data Not Lognormal at 5% Significance Level**											
1569												
1570	**Background Statistics assuming Lognormal Distribution**											
1571	95% UTL with 90% Coverage					12.17	90% Percentile (z)					8.368
1572	95% UPL (t)					10.32	95% Percentile (z)					9.292
1573	95% USL					10.39	99% Percentile (z)					11.31
1574												
1575	**Nonparametric Distribution Free Background Statistics**											
1576	**Data do not follow a Discernible Distribution (0.05)**											
1577												
1578	**Nonparametric Upper Limits for Background Threshold Values**											
1579	Order of Statistic, r					8	95% UTL with 90% Coverage					7.2
1580	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
1581							Approximate Sample Size needed to achieve specified CC					29
1582	95% Percentile Bootstrap UTL with 90% Coverage					7.2	95% BCA Bootstrap UTL with 90% Coverage					7.2
1583	95% UPL					7.2	90% Percentile					7.06
1584	90% Chebyshev UPL					10.18	95% Percentile					7.13
1585	95% Chebyshev UPL					12.09	99% Percentile					7.186
1586	95% USL					7.2						
1587												
1588	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1589	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1590	and consists of observations collected from clean unimpacted locations.											
1591	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1592	represents a background data set and when many onsite observations need to be compared with the BTV.											
1593												
1594	**Cobalt (0.5 - 2)**											
1595												
1596	**General Statistics**											
1597	Total Number of Observations					8	Number of Distinct Observations					6
1598	Minimum					2.8	First Quartile					5.8
1599	Second Largest					7.2	Median					6.3
1600	Maximum					7.4	Third Quartile					7.2
1601	Mean					6.075	SD					1.487
1602	Coefficient of Variation					0.245	Skewness					-1.746
1603	Mean of logged Data					1.768	SD of logged Data					0.316
1604												
1605	**Critical Values for Background Threshold Values (BTVs)**											
1606	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
1607												
1608	**Normal GOF Test**											
1609	Shapiro Wilk Test Statistic					0.814	**Shapiro Wilk GOF Test**					
1610	5% Shapiro Wilk Critical Value					0.818	Data Not Normal at 5% Significance Level					
1611	Lilliefors Test Statistic					0.224	**Lilliefors GOF Test**					
1612	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
1613	**Data appear Approximate Normal at 5% Significance Level**											
1614												
1615	**Background Statistics Assuming Normal Distribution**											
1616	95% UTL with 90% Coverage					9.914	90% Percentile (z)					7.98
1617	95% UPL (t)					9.063	95% Percentile (z)					8.521
1618	95% USL					9.096	99% Percentile (z)					9.534

Preliminary Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1619											
1620	**Gamma GOF Test**										
1621				A-D Test Statistic	0.877	**Anderson-Darling Gamma GOF Test**					
1622				5% A-D Critical Value	0.715	Data Not Gamma Distributed at 5% Significance Level					
1623				K-S Test Statistic	0.268	**Kolmogorov-Smirnov Gamma GOF Test**					
1624				5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level					
1625	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**										
1626											
1627	**Gamma Statistics**										
1628				k hat (MLE)	13.8	k star (bias corrected MLE)	8.707				
1629				Theta hat (MLE)	0.44	Theta star (bias corrected MLE)	0.698				
1630				nu hat (MLE)	220.8	nu star (bias corrected)	139.3				
1631				MLE Mean (bias corrected)	6.075	MLE Sd (bias corrected)	2.059				
1632											
1633	**Background Statistics Assuming Gamma Distribution**										
1634				95% Wilson Hilferty (WH) Approx. Gamma UPL	10.1	90% Percentile	8.817				
1635				95% Hawkins Wixley (HW) Approx. Gamma UPL	10.3	95% Percentile	9.809				
1636				95% WH Approx. Gamma UTL with 90% Coverage	11.57	99% Percentile	11.86				
1637				95% HW Approx. Gamma UTL with 90% Coverage	11.91						
1638				95% WH USL	10.16	95% HW USL	10.36				
1639											
1640	**Lognormal GOF Test**										
1641				Shapiro Wilk Test Statistic	0.717	**Shapiro Wilk Lognormal GOF Test**					
1642				5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
1643				Lilliefors Test Statistic	0.296	**Lilliefors Lognormal GOF Test**					
1644				5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level					
1645	**Data Not Lognormal at 5% Significance Level**										
1646											
1647	**Background Statistics assuming Lognormal Distribution**										
1648				95% UTL with 90% Coverage	13.24	90% Percentile (z)	8.781				
1649				95% UPL (t)	11.05	95% Percentile (z)	9.849				
1650				95% USL	11.13	99% Percentile (z)	12.22				
1651											
1652	**Nonparametric Distribution Free Background Statistics**										
1653	**Data appear Approximate Normal at 5% Significance Level**										
1654											
1655	**Nonparametric Upper Limits for Background Threshold Values**										
1656				Order of Statistic, r	8	95% UTL with 90% Coverage	7.4				
1657				Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL	0.57				
1658						Approximate Sample Size needed to achieve specified CC	29				
1659				95% Percentile Bootstrap UTL with 90% Coverage	7.4	95% BCA Bootstrap UTL with 90% Coverage	7.4				
1660				95% UPL	7.4	90% Percentile	7.26				
1661				90% Chebyshev UPL	10.81	95% Percentile	7.33				
1662				95% Chebyshev UPL	12.95	99% Percentile	7.386				
1663				95% USL	7.4						
1664											
1665	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
1666	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
1667	and consists of observations collected from clean unimpacted locations.										
1668	The use of USL tends to provide a balance between false positives and false negatives provided the data										
1669	represents a background data set and when many onsite observations need to be compared with the BTV.										
1670											
1671	**Cobalt (10 - 12)**										
1672											
1673	**General Statistics**										
1674				Total Number of Observations	8	Number of Distinct Observations	7				
1675				Minimum	3.2	First Quartile	3.775				
1676				Second Largest	5.7	Median	4.6				
1677				Maximum	5.7	Third Quartile	5.25				
1678				Mean	4.55	SD	0.932				
1679				Coefficient of Variation	0.205	Skewness	-0.0671				
1680				Mean of logged Data	1.496	SD of logged Data	0.211				
1681											
1682	**Critical Values for Background Threshold Values (BTVs)**										
1683				Tolerance Factor K (For UTL)	2.582	d2max (for USL)	2.032				
1684											
1685	**Normal GOF Test**										
1686				Shapiro Wilk Test Statistic	0.934	**Shapiro Wilk GOF Test**					
1687				5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
1688				Lilliefors Test Statistic	0.165	**Lilliefors GOF Test**					
1689				5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
1690	**Data appear Normal at 5% Significance Level**										
1691											
1692	**Background Statistics Assuming Normal Distribution**										
1693				95% UTL with 90% Coverage	6.956	90% Percentile (z)	5.744				
1694				95% UPL (t)	6.423	95% Percentile (z)	6.083				
1695				95% USL	6.443	99% Percentile (z)	6.718				
1696											
1697	**Gamma GOF Test**										
1698				A-D Test Statistic	0.286	**Anderson-Darling Gamma GOF Test**					
1699				5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level					
1700				K-S Test Statistic	0.172	**Kolmogorov-Smirnov Gamma GOF Test**					
1701				5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level					
1702	**Detected data appear Gamma Distributed at 5% Significance Level**										
1703											
1704	**Gamma Statistics**										

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
1705					k hat (MLE)	26.36				k star (bias corrected MLE)		16.56
1706					Theta hat (MLE)	0.173				Theta star (bias corrected MLE)		0.275
1707					nu hat (MLE)	421.7				nu star (bias corrected)		264.9
1708					MLE Mean (bias corrected)	4.55				MLE Sd (bias corrected)		1.118
1709												
1710	**Background Statistics Assuming Gamma Distribution**											
1711					95% Wilson Hilferty (WH) Approx. Gamma UPL	6.659				90% Percentile		6.029
1712					95% Hawkins Wixley (HW) Approx. Gamma UPL	6.696				95% Percentile		6.532
1713					95% WH Approx. Gamma UTL with 90% Coverage	7.383				99% Percentile		7.547
1714					95% HW Approx. Gamma UTL with 90% Coverage	7.453						
1715					95% WH USL	6.686				95% HW USL		6.724
1716												
1717	**Lognormal GOF Test**											
1718					Shapiro Wilk Test Statistic	0.934			**Shapiro Wilk Lognormal GOF Test**			
1719					5% Shapiro Wilk Critical Value	0.818			Data appear Lognormal at 5% Significance Level			
1720					Lilliefors Test Statistic	0.152			**Lilliefors Lognormal GOF Test**			
1721					5% Lilliefors Critical Value	0.283			Data appear Lognormal at 5% Significance Level			
1722	**Data appear Lognormal at 5% Significance Level**											
1723												
1724	**Background Statistics assuming Lognormal Distribution**											
1725					95% UTL with 90% Coverage	7.699				90% Percentile (z)		5.851
1726					95% UPL (t)	6.823				95% Percentile (z)		6.317
1727					95% USL	6.855				99% Percentile (z)		7.295
1728												
1729	**Nonparametric Distribution Free Background Statistics**											
1730	**Data appear Normal at 5% Significance Level**											
1731												
1732	**Nonparametric Upper Limits for Background Threshold Values**											
1733					Order of Statistic, r	8				95% UTL with 90% Coverage		5.7
1734					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
1735										Approximate Sample Size needed to achieve specified CC		29
1736					95% Percentile Bootstrap UTL with 90% Coverage	5.7				95% BCA Bootstrap UTL with 90% Coverage		5.7
1737					95% UPL	5.7				90% Percentile		5.7
1738					90% Chebyshev UPL	7.516				95% Percentile		5.7
1739					95% Chebyshev UPL	8.859				99% Percentile		5.7
1740					95% USL	5.7						
1741												
1742	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1743	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1744	and consists of observations collected from clean unimpacted locations.											
1745	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1746	represents a background data set and when many onsite observations need to be compared with the BTV.											
1747												
1748	**Copper (0 - 0.5)**											
1749												
1750	**General Statistics**											
1751					Total Number of Observations	8				Number of Distinct Observations		8
1752					Minimum	9.1				First Quartile		13.73
1753					Second Largest	24.5				Median		17.75
1754					Maximum	27				Third Quartile		21.35
1755					Mean	17.89				SD		6.015
1756					Coefficient of Variation	0.336				Skewness		0.156
1757					Mean of logged Data	2.831				SD of logged Data		0.359
1758												
1759	**Critical Values for Background Threshold Values (BTVs)**											
1760					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
1761												
1762	**Normal GOF Test**											
1763					Shapiro Wilk Test Statistic	0.981			**Shapiro Wilk GOF Test**			
1764					5% Shapiro Wilk Critical Value	0.818			Data appear Normal at 5% Significance Level			
1765					Lilliefors Test Statistic	0.114			**Lilliefors GOF Test**			
1766					5% Lilliefors Critical Value	0.283			Data appear Normal at 5% Significance Level			
1767	**Data appear Normal at 5% Significance Level**											
1768												
1769	**Background Statistics Assuming Normal Distribution**											
1770					95% UTL with 90% Coverage	33.42				90% Percentile (z)		25.6
1771					95% UPL (t)	29.97				95% Percentile (z)		27.78
1772					95% USL	30.11				99% Percentile (z)		31.88
1773												
1774	**Gamma GOF Test**											
1775					A-D Test Statistic	0.148			**Anderson-Darling Gamma GOF Test**			
1776					5% A-D Critical Value	0.715			Detected data appear Gamma Distributed at 5% Significance Level			
1777					K-S Test Statistic	0.12			**Kolmogorov-Smirnov Gamma GOF Test**			
1778					5% K-S Critical Value	0.294			Detected data appear Gamma Distributed at 5% Significance Level			
1779	**Detected data appear Gamma Distributed at 5% Significance Level**											
1780												
1781	**Gamma Statistics**											
1782					k hat (MLE)	9.497				k star (bias corrected MLE)		6.019
1783					Theta hat (MLE)	1.883				Theta star (bias corrected MLE)		2.972
1784					nu hat (MLE)	152				nu star (bias corrected)		96.31
1785					MLE Mean (bias corrected)	17.89				MLE Sd (bias corrected)		7.291
1786												
1787	**Background Statistics Assuming Gamma Distribution**											
1788					95% Wilson Hilferty (WH) Approx. Gamma UPL	32.55				90% Percentile		27.63
1789					95% Hawkins Wixley (HW) Approx. Gamma UPL	33.04				95% Percentile		31.32
1790					95% WH Approx. Gamma UTL with 90% Coverage	38.14				99% Percentile		39.04

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1791	95% HW Approx. Gamma UTL with 90% Coverage					39.08						
1792	95% WH USL					32.76	95% HW USL					33.26
1793												
1794	**Lognormal GOF Test**											
1795	Shapiro Wilk Test Statistic					0.974	**Shapiro Wilk Lognormal GOF Test**					
1796	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
1797	Lilliefors Test Statistic					0.128	**Lilliefors Lognormal GOF Test**					
1798	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					
1799	**Data appear Lognormal at 5% Significance Level**											
1800												
1801	**Background Statistics assuming Lognormal Distribution**											
1802	95% UTL with 90% Coverage					42.82	90% Percentile (z)					26.85
1803	95% UPL (t)					34.87	95% Percentile (z)					30.59
1804	95% USL					35.15	99% Percentile (z)					39.07
1805												
1806	**Nonparametric Distribution Free Background Statistics**											
1807	**Data appear Normal at 5% Significance Level**											
1808												
1809	**Nonparametric Upper Limits for Background Threshold Values**											
1810	Order of Statistic, r					8	95% UTL with 90% Coverage					27
1811	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
1812							Approximate Sample Size needed to achieve specified CC					29
1813	95% Percentile Bootstrap UTL with 90% Coverage					27	95% BCA Bootstrap UTL with 90% Coverage					27
1814	95% UPL					27	90% Percentile					25.25
1815	90% Chebyshev UPL					37.03	95% Percentile					26.13
1816	95% Chebyshev UPL					45.7	99% Percentile					26.83
1817	95% USL					27						
1818												
1819	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1820	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1821	and consists of observations collected from clean unimpacted locations.											
1822	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1823	represents a background data set and when many onsite observations need to be compared with the BTV.											
1824												
1825	**Copper (0.5 - 2)**											
1826												
1827	**General Statistics**											
1828	Total Number of Observations					8	Number of Distinct Observations					7
1829	Minimum					10.2	First Quartile					10.68
1830	Second Largest					20.6	Median					16.7
1831	Maximum					23	Third Quartile					18.95
1832	Mean					15.86	SD					4.977
1833	Coefficient of Variation					0.314	Skewness					0.0573
1834	Mean of logged Data					2.718	SD of logged Data					0.327
1835												
1836	**Critical Values for Background Threshold Values (BTVs)**											
1837	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
1838												
1839	**Normal GOF Test**											
1840	Shapiro Wilk Test Statistic					0.893	**Shapiro Wilk GOF Test**					
1841	5% Shapiro Wilk Critical Value					0.818	Data appear Normal at 5% Significance Level					
1842	Lilliefors Test Statistic					0.225	**Lilliefors GOF Test**					
1843	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
1844	**Data appear Normal at 5% Significance Level**											
1845												
1846	**Background Statistics Assuming Normal Distribution**											
1847	95% UTL with 90% Coverage					28.71	90% Percentile (z)					22.24
1848	95% UPL (t)					25.86	95% Percentile (z)					24.05
1849	95% USL					25.97	99% Percentile (z)					27.44
1850												
1851	**Gamma GOF Test**											
1852	A-D Test Statistic					0.518	**Anderson-Darling Gamma GOF Test**					
1853	5% A-D Critical Value					0.715	Detected data appear Gamma Distributed at 5% Significance Level					
1854	K-S Test Statistic					0.246	**Kolmogorov-Smirnov Gamma GOF Test**					
1855	5% K-S Critical Value					0.294	Detected data appear Gamma Distributed at 5% Significance Level					
1856	**Detected data appear Gamma Distributed at 5% Significance Level**											
1857												
1858	**Gamma Statistics**											
1859	k hat (MLE)					11.13	k star (bias corrected MLE)					7.042
1860	Theta hat (MLE)					1.425	Theta star (bias corrected MLE)					2.253
1861	nu hat (MLE)					178.1	nu star (bias corrected)					112.7
1862	MLE Mean (bias corrected)					15.86	MLE Sd (bias corrected)					5.978
1863												
1864	**Background Statistics Assuming Gamma Distribution**											
1865	95% Wilson Hilferty (WH) Approx. Gamma UPL					27.75	90% Percentile					23.84
1866	95% Hawkins Wixley (HW) Approx. Gamma UPL					28.07	95% Percentile					26.8
1867	95% WH Approx. Gamma UTL with 90% Coverage					32.19	99% Percentile					32.96
1868	95% HW Approx. Gamma UTL with 90% Coverage					32.84						
1869	95% WH USL					27.91	95% HW USL					28.25
1870												
1871	**Lognormal GOF Test**											
1872	Shapiro Wilk Test Statistic					0.872	**Shapiro Wilk Lognormal GOF Test**					
1873	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
1874	Lilliefors Test Statistic					0.231	**Lilliefors Lognormal GOF Test**					
1875	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					
1876	**Data appear Lognormal at 5% Significance Level**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1877											
1878	**Background Statistics assuming Lognormal Distribution**										
1879			95% UTL with 90% Coverage		35.28			90% Percentile (z)		23.05	
1880			95% UPL (t)		29.25			95% Percentile (z)		25.96	
1881			95% USL		29.46			99% Percentile (z)		32.44	
1882											
1883	**Nonparametric Distribution Free Background Statistics**										
1884	**Data appear Normal at 5% Significance Level**										
1885											
1886	**Nonparametric Upper Limits for Background Threshold Values**										
1887			Order of Statistic, r		8			95% UTL with 90% Coverage		23	
1888			Approx, f used to compute achieved CC		0.889			Approximate Actual Confidence Coefficient achieved by UTL		0.57	
1889								Approximate Sample Size needed to achieve specified CC		29	
1890			95% Percentile Bootstrap UTL with 90% Coverage		23			95% BCA Bootstrap UTL with 90% Coverage		23	
1891			95% UPL		23			90% Percentile		21.32	
1892			90% Chebyshev UPL		31.7			95% Percentile		22.16	
1893			95% Chebyshev UPL		38.87			99% Percentile		22.83	
1894			95% USL		23						
1895											
1896	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
1897	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
1898	and consists of observations collected from clean unimpacted locations.										
1899	The use of USL tends to provide a balance between false positives and false negatives provided the data										
1900	represents a background data set and when many onsite observations need to be compared with the BTV.										
1901											
1902	**Copper (10 - 12)**										
1903											
1904	**General Statistics**										
1905			Total Number of Observations		8			Number of Distinct Observations		8	
1906			Minimum		3.7			First Quartile		9.5	
1907			Second Largest		14.8			Median		10.75	
1908			Maximum		17.4			Third Quartile		12.93	
1909			Mean		11.06			SD		4.066	
1910			Coefficient of Variation		0.368			Skewness		-0.284	
1911			Mean of logged Data		2.325			SD of logged Data		0.464	
1912											
1913	**Critical Values for Background Threshold Values (BTVs)**										
1914			Tolerance Factor K (For UTL)		2.582			d2max (for USL)		2.032	
1915											
1916	**Normal GOF Test**										
1917			Shapiro Wilk Test Statistic		0.962			**Shapiro Wilk GOF Test**			
1918			5% Shapiro Wilk Critical Value		0.818			Data appear Normal at 5% Significance Level			
1919			Lilliefors Test Statistic		0.198			**Lilliefors GOF Test**			
1920			5% Lilliefors Critical Value		0.283			Data appear Normal at 5% Significance Level			
1921	**Data appear Normal at 5% Significance Level**										
1922											
1923	**Background Statistics Assuming Normal Distribution**										
1924			95% UTL with 90% Coverage		21.56			90% Percentile (z)		16.27	
1925			95% UPL (t)		19.23			95% Percentile (z)		17.75	
1926			95% USL		19.32			99% Percentile (z)		20.52	
1927											
1928	**Gamma GOF Test**										
1929			A-D Test Statistic		0.431			**Anderson-Darling Gamma GOF Test**			
1930			5% A-D Critical Value		0.718			Detected data appear Gamma Distributed at 5% Significance Level			
1931			K-S Test Statistic		0.248			**Kolmogorov-Smirnov Gamma GOF Test**			
1932			5% K-S Critical Value		0.295			Detected data appear Gamma Distributed at 5% Significance Level			
1933	**Detected data appear Gamma Distributed at 5% Significance Level**										
1934											
1935	**Gamma Statistics**										
1936			k hat (MLE)		6.523			k star (bias corrected MLE)		4.16	
1937			Theta hat (MLE)		1.696			Theta star (bias corrected MLE)		2.659	
1938			nu hat (MLE)		104.4			nu star (bias corrected)		66.56	
1939			MLE Mean (bias corrected)		11.06			MLE Sd (bias corrected)		5.424	
1940											
1941	**Background Statistics Assuming Gamma Distribution**										
1942			95% Wilson Hilferty (WH) Approx. Gamma UPL		22.31			90% Percentile		18.33	
1943			95% Hawkins Wixley (HW) Approx. Gamma UPL		23.01			95% Percentile		21.22	
1944			95% WH Approx. Gamma UTL with 90% Coverage		26.8			99% Percentile		27.39	
1945			95% HW Approx. Gamma UTL with 90% Coverage		28.06						
1946			95% WH USL		22.47			95% HW USL		23.19	
1947											
1948	**Lognormal GOF Test**										
1949			Shapiro Wilk Test Statistic		0.85			**Shapiro Wilk Lognormal GOF Test**			
1950			5% Shapiro Wilk Critical Value		0.818			Data appear Lognormal at 5% Significance Level			
1951			Lilliefors Test Statistic		0.285			**Lilliefors Lognormal GOF Test**			
1952			5% Lilliefors Critical Value		0.283			Data Not Lognormal at 5% Significance Level			
1953	**Data appear Approximate Lognormal at 5% Significance Level**										
1954											
1955	**Background Statistics assuming Lognormal Distribution**										
1956			95% UTL with 90% Coverage		33.89			90% Percentile (z)		18.53	
1957			95% UPL (t)		25.98			95% Percentile (z)		21.94	
1958			95% USL		26.25			99% Percentile (z)		30.1	
1959											
1960	**Nonparametric Distribution Free Background Statistics**										
1961	**Data appear Normal at 5% Significance Level**										
1962											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

1963	**Nonparametric Upper Limits for Background Threshold Values**										
1964	Order of Statistic, r				8	95% UTL with 90% Coverage					17.4
1965	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
1966						Approximate Sample Size needed to achieve specified CC					29
1967	95% Percentile Bootstrap UTL with 90% Coverage				17.4	95% BCA Bootstrap UTL with 90% Coverage					17.4
1968	95% UPL				17.4	90% Percentile					15.58
1969	90% Chebyshev UPL				24	95% Percentile					16.49
1970	95% Chebyshev UPL				29.86	99% Percentile					17.22
1971	95% USL				17.4						
1972											
1973	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
1974	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
1975	and consists of observations collected from clean unimpacted locations.										
1976	The use of USL tends to provide a balance between false positives and false negatives provided the data										
1977	represents a background data set and when many onsite observations need to be compared with the BTV.										
1978											
1979	**Cyanide, Total (0 - 0.5)**										
1980											
1981	**General Statistics**										
1982	Total Number of Observations				8	Number of Missing Observations					0
1983	Number of Distinct Observations				7						
1984	Number of Detects				7	Number of Non-Detects					1
1985	Number of Distinct Detects				6	Number of Distinct Non-Detects					1
1986	Minimum Detect				0.087	Minimum Non-Detect					0.026
1987	Maximum Detect				0.68	Maximum Non-Detect					0.026
1988	Variance Detected				0.0458	Percent Non-Detects					12.5%
1989	Mean Detected				0.198	SD Detected					0.214
1990	Mean of Detected Logged Data				-1.907	SD of Detected Logged Data					0.702
1991											
1992	**Critical Values for Background Threshold Values (BTVs)**										
1993	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032
1994											
1995	**Normal GOF Test on Detects Only**										
1996	Shapiro Wilk Test Statistic				0.56	**Shapiro Wilk GOF Test**					
1997	5% Shapiro Wilk Critical Value				0.803	Data Not Normal at 5% Significance Level					
1998	Lilliefors Test Statistic				0.409	**Lilliefors GOF Test**					
1999	5% Lilliefors Critical Value				0.304	Data Not Normal at 5% Significance Level					
2000	**Data Not Normal at 5% Significance Level**										
2001											
2002	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**										
2003	KM Mean				0.177	KM SD					0.194
2004	95% UTL90% Coverage				0.677	95% KM UPL (t)					0.566
2005	90% KM Percentile (z)				0.425	95% KM Percentile (z)					0.496
2006	99% KM Percentile (z)				0.628	95% KM USL					0.571
2007											
2008	**DL/2 Substitution Background Statistics Assuming Normal Distribution**										
2009	Mean				0.175	SD					0.209
2010	95% UTL90% Coverage				0.714	95% UPL (t)					0.594
2011	90% Percentile (z)				0.442	95% Percentile (z)					0.518
2012	99% Percentile (z)				0.661	95% USL					0.599
2013	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**										
2014											
2015	**Gamma GOF Tests on Detected Observations Only**										
2016	A-D Test Statistic				1.232	**Anderson-Darling GOF Test**					
2017	5% A-D Critical Value				0.716	Data Not Gamma Distributed at 5% Significance Level					
2018	K-S Test Statistic				0.363	**Kolmogorov-Smirnov GOF**					
2019	5% K-S Critical Value				0.316	Data Not Gamma Distributed at 5% Significance Level					
2020	**Data Not Gamma Distributed at 5% Significance Level**										
2021											
2022	**Gamma Statistics on Detected Data Only**										
2023	k hat (MLE)				1.884	k star (bias corrected MLE)					1.172
2024	Theta hat (MLE)				0.105	Theta star (bias corrected MLE)					0.169
2025	nu hat (MLE)				26.37	nu star (bias corrected)					16.4
2026	MLE Mean (bias corrected)				0.198						
2027	MLE Sd (bias corrected)				0.183	95% Percentile of Chisquare (2kstar)					6.64
2028											
2029	**Gamma ROS Statistics using Imputed Non-Detects**										
2030	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
2031	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
2032	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
2033	This is especially true when the sample size is small.										
2034	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
2035	Minimum				0.01	Mean					0.175
2036	Maximum				0.68	Median					0.115
2037	SD				0.209	CV					1.197
2038	k hat (MLE)				1.139	k star (bias corrected MLE)					0.795
2039	Theta hat (MLE)				0.153	Theta star (bias corrected MLE)					0.22
2040	nu hat (MLE)				18.23	nu star (bias corrected)					12.73
2041	MLE Mean (bias corrected)				0.175	MLE Sd (bias corrected)					0.196
2042	95% Percentile of Chisquare (2kstar)				5.171	90% Percentile					0.425
2043	95% Percentile				0.568	99% Percentile					0.904
2044	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**										
2045	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
2046		WH	HW				WH	HW			
2047	95% Approx. Gamma UTL with 90% Coverage	0.923	1.028			95% Approx. Gamma UPL	0.657	0.7			
2048	95% Gamma USL	0.666	0.711								

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2049											
2050	**Estimates of Gamma Parameters using KM Estimates**										
2051					Mean (KM)	0.177			SD (KM)		0.194
2052					Variance (KM)	0.0376			SE of Mean (KM)		0.0741
2053					k hat (KM)	0.829			k star (KM)		0.602
2054					nu hat (KM)	13.27			nu star (KM)		9.628
2055					theta hat (KM)	0.213			theta star (KM)		0.294
2056					80% gamma percentile (KM)	0.291			90% gamma percentile (KM)		0.459
2057					95% gamma percentile (KM)	0.635			99% gamma percentile (KM)		1.06
2058											
2059	**The following statistics are computed using gamma distribution and KM estimates**										
2060	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
2061						WH	HW			WH	HW
2062					95% Approx. Gamma UTL with 90% Coverage	0.829	0.877		95% Approx. Gamma UPL	0.56	0.569
2063					95% KM Gamma Percentile	0.452	0.452		95% Gamma USL	0.567	0.577
2064											
2065	**Lognormal GOF Test on Detected Observations Only**										
2066					Shapiro Wilk Test Statistic	0.716		**Shapiro Wilk GOF Test**			
2067					5% Shapiro Wilk Critical Value	0.803		Data Not Lognormal at 5% Significance Level			
2068					Lilliefors Test Statistic	0.334		**Lilliefors GOF Test**			
2069					5% Lilliefors Critical Value	0.304		Data Not Lognormal at 5% Significance Level			
2070	**Data Not Lognormal at 5% Significance Level**										
2071											
2072	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**										
2073					Mean in Original Scale	0.177			Mean in Log Scale		-2.096
2074					SD in Original Scale	0.207			SD in Log Scale		0.842
2075					95% UTL90% Coverage	1.081			95% BCA UTL90% Coverage		0.68
2076					95% Bootstrap (%) UTL90% Coverage	0.68			95% UPL (t)		0.668
2077					90% Percentile (z)	0.362			95% Percentile (z)		0.491
2078					99% Percentile (z)	0.872			95% USL		0.68
2079											
2080	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
2081					KM Mean of Logged Data	-2.125			95% KM UTL (Lognormal)90% Coverage		1.039
2082					KM SD of Logged Data	0.838			95% KM UPL (Lognormal)		0.643
2083					95% KM Percentile Lognormal (z)	0.474			95% KM USL (Lognormal)		0.655
2084											
2085	**Background DL/2 Statistics Assuming Lognormal Distribution**										
2086					Mean in Original Scale	0.175			Mean in Log Scale		-2.212
2087					SD in Original Scale	0.209			SD in Log Scale		1.079
2088					95% UTL90% Coverage	1.775			95% UPL (t)		0.957
2089					90% Percentile (z)	0.436			95% Percentile (z)		0.646
2090					99% Percentile (z)	1.347			95% USL		0.98
2091	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**										
2092											
2093	**Nonparametric Distribution Free Background Statistics**										
2094	**Data do not follow a Discernible Distribution (0.05)**										
2095											
2096	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**										
2097					Order of Statistic, r	8			95% UTL with90% Coverage		0.68
2098					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL		0.57
2099					Approximate Sample Size needed to achieve specified CC	29			95% UPL		0.68
2100					95% USL	0.68			95% KM Chebyshev UPL		1.073
2101											
2102	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
2103	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
2104	and consists of observations collected from clean unimpacted locations.										
2105	The use of USL tends to provide a balance between false positives and false negatives provided the data										
2106	represents a background data set and when many onsite observations need to be compared with the BTV.										
2107											
2108	**Cyanide, Total (0.5 - 2)**										
2109											
2110	**General Statistics**										
2111					Total Number of Observations	8			Number of Missing Observations		0
2112					Number of Distinct Observations	8					
2113					Number of Detects	7			Number of Non-Detects		1
2114					Number of Distinct Detects	7			Number of Distinct Non-Detects		1
2115					Minimum Detect	0.034			Minimum Non-Detect		0.024
2116					Maximum Detect	0.16			Maximum Non-Detect		0.024
2117					Variance Detected	0.00179			Percent Non-Detects		12.5%
2118					Mean Detected	0.0873			SD Detected		0.0423
2119					Mean of Detected Logged Data	-2.546			SD of Detected Logged Data		0.515
2120											
2121	**Critical Values for Background Threshold Values (BTVs)**										
2122					Tolerance Factor K (For UTL)	2.582			d2max (for USL)		2.032
2123											
2124	**Normal GOF Test on Detects Only**										
2125					Shapiro Wilk Test Statistic	0.965		**Shapiro Wilk GOF Test**			
2126					5% Shapiro Wilk Critical Value	0.803		Detected Data appear Normal at 5% Significance Level			
2127					Lilliefors Test Statistic	0.161		**Lilliefors GOF Test**			
2128					5% Lilliefors Critical Value	0.304		Detected Data appear Normal at 5% Significance Level			
2129	**Detected Data appear Normal at 5% Significance Level**										
2130											
2131	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**										
2132					KM Mean	0.0794			KM SD		0.0422
2133					95% UTL90% Coverage	0.188			95% KM UPL (t)		0.164
2134					90% KM Percentile (z)	0.133			95% KM Percentile (z)		0.149

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2135	99% KM Percentile (z)				0.178					95% KM USL		0.165
2136												
2137	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
2138	Mean				0.0779					SD		0.0474
2139	95% UTL90% Coverage				0.2					95% UPL (t)		0.173
2140	90% Percentile (z)				0.139					95% Percentile (z)		0.156
2141	99% Percentile (z)				0.188					95% USL		0.174
2142	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
2143												
2144	**Gamma GOF Tests on Detected Observations Only**											
2145	A-D Test Statistic				0.15					**Anderson-Darling GOF Test**		
2146	5% A-D Critical Value				0.71					Detected data appear Gamma Distributed at 5% Significance Level		
2147	K-S Test Statistic				0.136					**Kolmogorov-Smirnov GOF**		
2148	5% K-S Critical Value				0.313					Detected data appear Gamma Distributed at 5% Significance Level		
2149	**Detected data appear Gamma Distributed at 5% Significance Level**											
2150												
2151	**Gamma Statistics on Detected Data Only**											
2152	k hat (MLE)				4.823					k star (bias corrected MLE)		2.851
2153	Theta hat (MLE)				0.0181					Theta star (bias corrected MLE)		0.0306
2154	nu hat (MLE)				67.52					nu star (bias corrected)		39.92
2155	MLE Mean (bias corrected)				0.0873							
2156	MLE Sd (bias corrected)				0.0517					95% Percentile of Chisquare (2kstar)		12.14
2157												
2158	**Gamma ROS Statistics using Imputed Non-Detects**											
2159	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
2160	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
2161	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
2162	This is especially true when the sample size is small.											
2163	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
2164	Minimum				0.01					Mean		0.0776
2165	Maximum				0.16					Median		0.076
2166	SD				0.0478					CV		0.615
2167	k hat (MLE)				2.173					k star (bias corrected MLE)		1.442
2168	Theta hat (MLE)				0.0357					Theta star (bias corrected MLE)		0.0538
2169	nu hat (MLE)				34.77					nu star (bias corrected)		23.07
2170	MLE Mean (bias corrected)				0.0776					MLE Sd (bias corrected)		0.0646
2171	95% Percentile of Chisquare (2kstar)				7.611					90% Percentile		0.163
2172	95% Percentile				0.205					99% Percentile		0.299
2173	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
2174	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
2175			WH		HW						WH	HW
2176	95% Approx. Gamma UTL with 90% Coverage		0.301		0.335					95% Approx. Gamma UPL	0.229	0.246
2177	95% Gamma USL		0.232		0.249							
2178												
2179	**Estimates of Gamma Parameters using KM Estimates**											
2180	Mean (KM)				0.0794					SD (KM)		0.0422
2181	Variance (KM)				0.00178					SE of Mean (KM)		0.0161
2182	k hat (KM)				3.539					k star (KM)		2.295
2183	nu hat (KM)				56.63					nu star (KM)		36.72
2184	theta hat (KM)				0.0224					theta star (KM)		0.0346
2185	80% gamma percentile (KM)				0.117					90% gamma percentile (KM)		0.15
2186	95% gamma percentile (KM)				0.18					99% gamma percentile (KM)		0.248
2187												
2188	**The following statistics are computed using gamma distribution and KM estimates**											
2189	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
2190			WH		HW						WH	HW
2191	95% Approx. Gamma UTL with 90% Coverage		0.254		0.269					95% Approx. Gamma UPL	0.189	0.196
2192	95% KM Gamma Percentile		0.162		0.166					95% Gamma USL	0.191	0.197
2193												
2194	**Lognormal GOF Test on Detected Observations Only**											
2195	Shapiro Wilk Test Statistic				0.985					**Shapiro Wilk GOF Test**		
2196	5% Shapiro Wilk Critical Value				0.803					Detected Data appear Lognormal at 5% Significance Level		
2197	Lilliefors Test Statistic				0.17					**Lilliefors GOF Test**		
2198	5% Lilliefors Critical Value				0.304					Detected Data appear Lognormal at 5% Significance Level		
2199	**Detected Data appear Lognormal at 5% Significance Level**											
2200												
2201	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
2202	Mean in Original Scale				0.0791					Mean in Log Scale		-2.706
2203	SD in Original Scale				0.0455					SD in Log Scale		0.658
2204	95% UTL90% Coverage				0.365					95% BCA UTL90% Coverage		0.16
2205	95% Bootstrap (%) UTL90% Coverage				0.16					95% UPL (t)		0.251
2206	90% Percentile (z)				0.155					95% Percentile (z)		0.197
2207	99% Percentile (z)				0.309					95% USL		0.254
2208												
2209	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
2210	KM Mean of Logged Data				-2.694					95% KM UTL (Lognormal)90% Coverage		0.313
2211	KM SD of Logged Data				0.593					95% KM UPL (Lognormal)		0.223
2212	95% KM Percentile Lognormal (z)				0.179					95% KM USL (Lognormal)		0.226
2213												
2214	**Background DL/2 Statistics Assuming Lognormal Distribution**											
2215	Mean in Original Scale				0.0779					Mean in Log Scale		-2.78
2216	SD in Original Scale				0.0474					SD in Log Scale		0.817
2217	95% UTL90% Coverage				0.511					95% UPL (t)		0.32
2218	90% Percentile (z)				0.177					95% Percentile (z)		0.238
2219	99% Percentile (z)				0.415					95% USL		0.326
2220	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2221											
2222	**Nonparametric Distribution Free Background Statistics**										
2223	**Data appear to follow a Discernible Distribution at 5% Significance Level**										
2224											
2225	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**										
2226	Order of Statistic, r					8		95% UTL with90% Coverage			0.16
2227	Approx, f used to compute achieved CC					0.889		Approximate Actual Confidence Coefficient achieved by UTL			0.57
2228	Approximate Sample Size needed to achieve specified CC					29		95% UPL			0.16
2229	95% USL					0.16		95% KM Chebyshev UPL			0.274
2230											
2231	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
2232	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
2233	and consists of observations collected from clean unimpacted locations.										
2234	The use of USL tends to provide a balance between false positives and false negatives provided the data										
2235	represents a background data set and when many onsite observations need to be compared with the BTV.										
2236											
2237	**Cyanide, Total (10 - 12)**										
2238											
2239	**General Statistics**										
2240	Total Number of Observations					8		Number of Missing Observations			0
2241	Number of Distinct Observations					7					
2242	Number of Detects					6		Number of Non-Detects			2
2243	Number of Distinct Detects					5		Number of Distinct Non-Detects			2
2244	Minimum Detect					0.022		Minimum Non-Detect			0.017
2245	Maximum Detect					0.034		Maximum Non-Detect			0.018
2246	Variance Detected					2.1767E-5		Percent Non-Detects			25%
2247	Mean Detected					0.0262		SD Detected			0.00467
2248	Mean of Detected Logged Data					-3.656		SD of Detected Logged Data			0.171
2249											
2250	**Critical Values for Background Threshold Values (BTVs)**										
2251	Tolerance Factor K (For UTL)					2.582		d2max (for USL)			2.032
2252											
2253	**Normal GOF Test on Detects Only**										
2254	Shapiro Wilk Test Statistic					0.893		**Shapiro Wilk GOF Test**			
2255	5% Shapiro Wilk Critical Value					0.788		Detected Data appear Normal at 5% Significance Level			
2256	Lilliefors Test Statistic					0.186		**Lilliefors GOF Test**			
2257	5% Lilliefors Critical Value					0.325		Detected Data appear Normal at 5% Significance Level			
2258	**Detected Data appear Normal at 5% Significance Level**										
2259											
2260	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**										
2261	KM Mean					0.0239		KM SD			0.00542
2262	95% UTL90% Coverage					0.0379		95% KM UPL (t)			0.0348
2263	90% KM Percentile (z)					0.0308		95% KM Percentile (z)			0.0328
2264	99% KM Percentile (z)					0.0365		95% KM USL			0.0349
2265											
2266	**DL/2 Substitution Background Statistics Assuming Normal Distribution**										
2267	Mean					0.0218		SD			0.00898
2268	95% UTL90% Coverage					0.045		95% UPL (t)			0.0398
2269	90% Percentile (z)					0.0333		95% Percentile (z)			0.0366
2270	99% Percentile (z)					0.0427		95% USL			0.04
2271	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**										
2272											
2273	**Gamma GOF Tests on Detected Observations Only**										
2274	A-D Test Statistic					0.337		**Anderson-Darling GOF Test**			
2275	5% A-D Critical Value					0.697		Detected data appear Gamma Distributed at 5% Significance Level			
2276	K-S Test Statistic					0.187		**Kolmogorov-Smirnov GOF**			
2277	5% K-S Critical Value					0.332		Detected data appear Gamma Distributed at 5% Significance Level			
2278	**Detected data appear Gamma Distributed at 5% Significance Level**										
2279											
2280	**Gamma Statistics on Detected Data Only**										
2281	k hat (MLE)					40.15		k star (bias corrected MLE)			20.19
2282	Theta hat (MLE)					6.5169E-4		Theta star (bias corrected MLE)			0.0013
2283	nu hat (MLE)					481.8		nu star (bias corrected)			242.2
2284	MLE Mean (bias corrected)					0.0262					
2285	MLE Sd (bias corrected)					0.00582		95% Percentile of Chisquare (2kstar)			56.2
2286											
2287	**Gamma ROS Statistics using Imputed Non-Detects**										
2288	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
2289	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
2290	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
2291	This is especially true when the sample size is small.										
2292	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
2293	Minimum					0.0152		Mean			0.0234
2294	Maximum					0.034		Median			0.023
2295	SD					0.00641		CV			0.274
2296	k hat (MLE)					14.76		k star (bias corrected MLE)			9.308
2297	Theta hat (MLE)					0.00159		Theta star (bias corrected MLE)			0.00252
2298	nu hat (MLE)					236.1		nu star (bias corrected)			148.9
2299	MLE Mean (bias corrected)					0.0234		MLE Sd (bias corrected)			0.00768
2300	95% Percentile of Chisquare (2kstar)					29.65		90% Percentile			0.0337
2301	95% Percentile					0.0373		99% Percentile			0.0449
2302	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**										
2303	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
2304		WH		HW					WH		HW
2305	95% Approx. Gamma UTL with 90% Coverage	0.0438		0.0445		95% Approx. Gamma UPL			0.0384		0.0388
2306	95% Gamma USL	0.0386		0.039							

Preliminary - Under EPA and MDEQ Review

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Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
2307												
2308	**Estimates of Gamma Parameters using KM Estimates**											
2309					Mean (KM)	0.0239				SD (KM)		0.00542
2310					Variance (KM)	2.9359E-5				SE of Mean (KM)		0.0021
2311					k hat (KM)	19.42				k star (KM)		12.22
2312					nu hat (KM)	310.6				nu star (KM)		195.5
2313					theta hat (KM)	0.00123				theta star (KM)		0.00195
2314					80% gamma percentile (KM)	0.0294				90% gamma percentile (KM)		0.0329
2315					95% gamma percentile (KM)	0.0361				99% gamma percentile (KM)		0.0426
2316												
2317	**The following statistics are computed using gamma distribution and KM estimates**											
2318	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
2319					WH	HW					WH	HW
2320				95% Approx. Gamma UTL with 90% Coverage	0.0414	0.0418				95% Approx. Gamma UPL	0.0359	0.036
2321				95% KM Gamma Percentile	0.0333	0.0334				95% Gamma USL	0.036	0.0362
2322												
2323	**Lognormal GOF Test on Detected Observations Only**											
2324					Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk GOF Test**					
2325					5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level					
2326					Lilliefors Test Statistic	0.173	**Lilliefors GOF Test**					
2327					5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level					
2328	**Detected Data appear Lognormal at 5% Significance Level**											
2329												
2330	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
2331					Mean in Original Scale	0.0238				Mean in Log Scale		-3.764
2332					SD in Original Scale	0.00588				SD in Log Scale		0.247
2333					95% UTL90% Coverage	0.0439				95% BCA UTL90% Coverage		0.034
2334					95% Bootstrap (%) UTL90% Coverage	0.034				95% UPL (t)		0.0381
2335					90% Percentile (z)	0.0318				95% Percentile (z)		0.0348
2336					99% Percentile (z)	0.0412				95% USL		0.0383
2337												
2338	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
2339					KM Mean of Logged Data	-3.76				95% KM UTL (Lognormal)90% Coverage		0.0417
2340					KM SD of Logged Data	0.226				95% KM UPL (Lognormal)		0.0367
2341					95% KM Percentile Lognormal (z)	0.0338				95% KM USL (Lognormal)		0.0368
2342												
2343	**Background DL/2 Statistics Assuming Lognormal Distribution**											
2344					Mean in Original Scale	0.0218				Mean in Log Scale		-3.927
2345					SD in Original Scale	0.00898				SD in Log Scale		0.522
2346					95% UTL90% Coverage	0.0759				95% UPL (t)		0.0563
2347					90% Percentile (z)	0.0385				95% Percentile (z)		0.0465
2348					99% Percentile (z)	0.0664				95% USL		0.0569
2349	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
2350												
2351	**Nonparametric Distribution Free Background Statistics**											
2352	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
2353												
2354	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
2355					Order of Statistic, r	8				95% UTL with90% Coverage		0.034
2356					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
2357					Approximate Sample Size needed to achieve specified CC	29				95% UPL		0.034
2358					95% USL	0.034				95% KM Chebyshev UPL		0.0489
2359												
2360	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
2361	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2362	and consists of observations collected from clean unimpacted locations.											
2363	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2364	represents a background data set and when many onsite observations need to be compared with the BTV.											
2365												
2366	**Iron (0 - 0.5)**											
2367												
2368	**General Statistics**											
2369					Total Number of Observations	8				Number of Distinct Observations		8
2370					Minimum	8140				First Quartile		16325
2371					Second Largest	18700				Median		17250
2372					Maximum	19900				Third Quartile		18625
2373					Mean	16518				SD		3632
2374					Coefficient of Variation	0.22				Skewness		-2.105
2375					Mean of logged Data	9.683				SD of logged Data		0.284
2376												
2377	**Critical Values for Background Threshold Values (BTVs)**											
2378					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
2379												
2380	**Normal GOF Test**											
2381					Shapiro Wilk Test Statistic	0.765	**Shapiro Wilk GOF Test**					
2382					5% Shapiro Wilk Critical Value	0.818	Data Not Normal at 5% Significance Level					
2383					Lilliefors Test Statistic	0.297	**Lilliefors GOF Test**					
2384					5% Lilliefors Critical Value	0.283	Data Not Normal at 5% Significance Level					
2385	**Data Not Normal at 5% Significance Level**											
2386												
2387	**Background Statistics Assuming Normal Distribution**											
2388					95% UTL with 90% Coverage	25894				90% Percentile (z)		21172
2389					95% UPL (t)	23815				95% Percentile (z)		22491
2390					95% USL	23896				99% Percentile (z)		24966
2391												
2392	**Gamma GOF Test**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
2393					A-D Test Statistic	1.095	**Anderson-Darling Gamma GOF Test**					
2394					5% A-D Critical Value	0.716	Data Not Gamma Distributed at 5% Significance Level					
2395					K-S Test Statistic	0.335	**Kolmogorov-Smirnov Gamma GOF Test**					
2396					5% K-S Critical Value	0.294	Data Not Gamma Distributed at 5% Significance Level					
2397	**Data Not Gamma Distributed at 5% Significance Level**											
2398												
2399	**Gamma Statistics**											
2400					k hat (MLE)	17.03	k star (bias corrected MLE)	10.73				
2401					Theta hat (MLE)	969.9	Theta star (bias corrected MLE)	1540				
2402					nu hat (MLE)	272.5	nu star (bias corrected)	171.6				
2403					MLE Mean (bias corrected)	16518	MLE Sd (bias corrected)	5043				
2404												
2405	**Background Statistics Assuming Gamma Distribution**											
2406					95% Wilson Hilferty (WH) Approx. Gamma UPL	26254	90% Percentile	23220				
2407					95% Hawkins Wixley (HW) Approx. Gamma UPL	26701	95% Percentile	25592				
2408					95% WH Approx. Gamma UTL with 90% Coverage	29728	99% Percentile	30449				
2409					95% HW Approx. Gamma UTL with 90% Coverage	30471						
2410					95% WH USL	26383	95% HW USL	26840				
2411												
2412	**Lognormal GOF Test**											
2413					Shapiro Wilk Test Statistic	0.672	**Shapiro Wilk Lognormal GOF Test**					
2414					5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
2415					Lilliefors Test Statistic	0.354	**Lilliefors Lognormal GOF Test**					
2416					5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level					
2417	**Data Not Lognormal at 5% Significance Level**											
2418												
2419	**Background Statistics assuming Lognormal Distribution**											
2420					95% UTL with 90% Coverage	33364	90% Percentile (z)	23068				
2421					95% UPL (t)	28361	95% Percentile (z)	25573				
2422					95% USL	28540	99% Percentile (z)	31029				
2423												
2424	**Nonparametric Distribution Free Background Statistics**											
2425	**Data do not follow a Discernible Distribution (0.05)**											
2426												
2427	**Nonparametric Upper Limits for Background Threshold Values**											
2428					Order of Statistic, r	8	95% UTL with 90% Coverage	19900				
2429					Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL	0.57				
2430							Approximate Sample Size needed to achieve specified CC	29				
2431					95% Percentile Bootstrap UTL with 90% Coverage	19900	95% BCA Bootstrap UTL with 90% Coverage	19900				
2432					95% UPL	19900	90% Percentile	19060				
2433					90% Chebyshev UPL	28073	95% Percentile	19480				
2434					95% Chebyshev UPL	33307	99% Percentile	19816				
2435					95% USL	19900						
2436												
2437	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
2438	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2439	and consists of observations collected from clean unimpacted locations.											
2440	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2441	represents a background data set and when many onsite observations need to be compared with the BTV.											
2442												
2443	**Iron (0.5 - 2)**											
2444												
2445	**General Statistics**											
2446					Total Number of Observations	8	Number of Distinct Observations	8				
2447					Minimum	7710	First Quartile	15600				
2448					Second Largest	18200	Median	16750				
2449					Maximum	19200	Third Quartile	17900				
2450					Mean	15901	SD	3573				
2451					Coefficient of Variation	0.225	Skewness	-2.061				
2452					Mean of logged Data	9.643	SD of logged Data	0.291				
2453												
2454	**Critical Values for Background Threshold Values (BTVs)**											
2455					Tolerance Factor K (For UTL)	2.582	d2max (for USL)	2.032				
2456												
2457	**Normal GOF Test**											
2458					Shapiro Wilk Test Statistic	0.781	**Shapiro Wilk GOF Test**					
2459					5% Shapiro Wilk Critical Value	0.818	Data Not Normal at 5% Significance Level					
2460					Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**					
2461					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
2462	**Data appear Approximate Normal at 5% Significance Level**											
2463												
2464	**Background Statistics Assuming Normal Distribution**											
2465					95% UTL with 90% Coverage	25127	90% Percentile (z)	20481				
2466					95% UPL (t)	23082	95% Percentile (z)	21779				
2467					95% USL	23161	99% Percentile (z)	24214				
2468												
2469	**Gamma GOF Test**											
2470					A-D Test Statistic	1.031	**Anderson-Darling Gamma GOF Test**					
2471					5% A-D Critical Value	0.716	Data Not Gamma Distributed at 5% Significance Level					
2472					K-S Test Statistic	0.315	**Kolmogorov-Smirnov Gamma GOF Test**					
2473					5% K-S Critical Value	0.294	Data Not Gamma Distributed at 5% Significance Level					
2474	**Data Not Gamma Distributed at 5% Significance Level**											
2475												
2476	**Gamma Statistics**											
2477					k hat (MLE)	16.25	k star (bias corrected MLE)	10.24				
2478					Theta hat (MLE)	978.7	Theta star (bias corrected MLE)	1553				

Preliminary - Under EPA 2nd MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2479				nu hat (MLE)	260				nu star (bias corrected)		163.8
2480				MLE Mean (bias corrected)	15901				MLE Sd (bias corrected)		4970
2481											
2482	**Background Statistics Assuming Gamma Distribution**										
2483			95% Wilson Hilferty (WH) Approx. Gamma UPL		25524				90% Percentile		22509
2484			95% Hawkins Wixley (HW) Approx. Gamma UPL		25974				95% Percentile		24859
2485			95% WH Approx. Gamma UTL with 90% Coverage		28972				99% Percentile		29679
2486			95% HW Approx. Gamma UTL with 90% Coverage		29724						
2487				95% WH USL	25652				95% HW USL		26112
2488											
2489	**Lognormal GOF Test**										
2490				Shapiro Wilk Test Statistic	0.684			**Shapiro Wilk Lognormal GOF Test**			
2491				5% Shapiro Wilk Critical Value	0.818			Data Not Lognormal at 5% Significance Level			
2492				Lilliefors Test Statistic	0.338			**Lilliefors Lognormal GOF Test**			
2493				5% Lilliefors Critical Value	0.283			Data Not Lognormal at 5% Significance Level			
2494	**Data Not Lognormal at 5% Significance Level**										
2495											
2496	**Background Statistics assuming Lognormal Distribution**										
2497				95% UTL with 90% Coverage	32670				90% Percentile (z)		22379
2498				95% UPL (t)	27658				95% Percentile (z)		24874
2499				95% USL	27837				99% Percentile (z)		30329
2500											
2501	**Nonparametric Distribution Free Background Statistics**										
2502	**Data appear Approximate Normal at 5% Significance Level**										
2503											
2504	**Nonparametric Upper Limits for Background Threshold Values**										
2505				Order of Statistic, r	8				95% UTL with 90% Coverage		19200
2506				Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
2507									Approximate Sample Size needed to achieve specified CC		29
2508				95% Percentile Bootstrap UTL with 90% Coverage	19200				95% BCA Bootstrap UTL with 90% Coverage		19200
2509				95% UPL	19200				90% Percentile		18500
2510				90% Chebyshev UPL	27271				95% Percentile		18850
2511				95% Chebyshev UPL	32421				99% Percentile		19130
2512				95% USL	19200						
2513											
2514	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
2515	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
2516	and consists of observations collected from clean unimpacted locations.										
2517	The use of USL tends to provide a balance between false positives and false negatives provided the data										
2518	represents a background data set and when many onsite observations need to be compared with the BTV.										
2519											
2520	**Iron (10 - 12)**										
2521											
2522	**General Statistics**										
2523				Total Number of Observations	8				Number of Distinct Observations		8
2524				Minimum	7100				First Quartile		9693
2525				Second Largest	13300				Median		12450
2526				Maximum	15000				Third Quartile		13000
2527				Mean	11564				SD		2554
2528				Coefficient of Variation	0.221				Skewness		-0.603
2529				Mean of logged Data	9.332				SD of logged Data		0.242
2530											
2531	**Critical Values for Background Threshold Values (BTVs)**										
2532				Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
2533											
2534	**Normal GOF Test**										
2535				Shapiro Wilk Test Statistic	0.94			**Shapiro Wilk GOF Test**			
2536				5% Shapiro Wilk Critical Value	0.818			Data appear Normal at 5% Significance Level			
2537				Lilliefors Test Statistic	0.208			**Lilliefors GOF Test**			
2538				5% Lilliefors Critical Value	0.283			Data appear Normal at 5% Significance Level			
2539	**Data appear Normal at 5% Significance Level**										
2540											
2541	**Background Statistics Assuming Normal Distribution**										
2542				95% UTL with 90% Coverage	18157				90% Percentile (z)		14836
2543				95% UPL (t)	16695				95% Percentile (z)		15764
2544				95% USL	16752				99% Percentile (z)		17504
2545											
2546	**Gamma GOF Test**										
2547				A-D Test Statistic	0.417			**Anderson-Darling Gamma GOF Test**			
2548				5% A-D Critical Value	0.716			Detected data appear Gamma Distributed at 5% Significance Level			
2549				K-S Test Statistic	0.236			**Kolmogorov-Smirnov Gamma GOF Test**			
2550				5% K-S Critical Value	0.294			Detected data appear Gamma Distributed at 5% Significance Level			
2551	**Detected data appear Gamma Distributed at 5% Significance Level**										
2552											
2553	**Gamma Statistics**										
2554				k hat (MLE)	20.96				k star (bias corrected MLE)		13.19
2555				Theta hat (MLE)	551.6				Theta star (bias corrected MLE)		877
2556				nu hat (MLE)	335.4				nu star (bias corrected)		211
2557				MLE Mean (bias corrected)	11564				MLE Sd (bias corrected)		3185
2558											
2559	**Background Statistics Assuming Gamma Distribution**										
2560				95% Wilson Hilferty (WH) Approx. Gamma UPL	17642				90% Percentile		15786
2561				95% Hawkins Wixley (HW) Approx. Gamma UPL	17802				95% Percentile		17251
2562				95% WH Approx. Gamma UTL with 90% Coverage	19771				99% Percentile		20229
2563				95% HW Approx. Gamma UTL with 90% Coverage	20056						
2564				95% WH USL	17722				95% HW USL		17885

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2565											
2566	**Lognormal GOF Test**										
2567	Shapiro Wilk Test Statistic				0.904	**Shapiro Wilk Lognormal GOF Test**					
2568	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
2569	Lilliefors Test Statistic				0.238	**Lilliefors Lognormal GOF Test**					
2570	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
2571	**Data appear Lognormal at 5% Significance Level**										
2572											
2573	**Background Statistics assuming Lognormal Distribution**										
2574	95% UTL with 90% Coverage				21090	90% Percentile (z)					15395
2575	95% UPL (t)				18361	95% Percentile (z)					16810
2576	95% USL				18460	99% Percentile (z)					19825
2577											
2578	**Nonparametric Distribution Free Background Statistics**										
2579	**Data appear Normal at 5% Significance Level**										
2580											
2581	**Nonparametric Upper Limits for Background Threshold Values**										
2582	Order of Statistic, r				8	95% UTL with 90% Coverage					15000
2583	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
2584						Approximate Sample Size needed to achieve specified CC					29
2585	95% Percentile Bootstrap UTL with 90% Coverage				15000	95% BCA Bootstrap UTL with 90% Coverage					15000
2586	95% UPL				15000	90% Percentile					13810
2587	90% Chebyshev UPL				19689	95% Percentile					14405
2588	95% Chebyshev UPL				23370	99% Percentile					14881
2589	95% USL				15000						
2590											
2591	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
2592	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
2593	and consists of observations collected from clean unimpacted locations.										
2594	The use of USL tends to provide a balance between false positives and false negatives provided the data										
2595	represents a background data set and when many onsite observations need to be compared with the BTV.										
2596											
2597	**Lead (0 - 0.5)**										
2598											
2599	**General Statistics**										
2600	Total Number of Observations				8	Number of Distinct Observations					7
2601	Minimum				6.4	First Quartile					12.25
2602	Second Largest				15.2	Median					13.1
2603	Maximum				15.9	Third Quartile					14.9
2604	Mean				12.81	SD					3
2605	Coefficient of Variation				0.234	Skewness					-1.512
2606	Mean of logged Data				2.519	SD of logged Data					0.29
2607											
2608	**Critical Values for Background Threshold Values (BTVs)**										
2609	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032
2610											
2611	**Normal GOF Test**										
2612	Shapiro Wilk Test Statistic				0.866	**Shapiro Wilk GOF Test**					
2613	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level					
2614	Lilliefors Test Statistic				0.209	**Lilliefors GOF Test**					
2615	5% Lilliefors Critical Value				0.283	Data appear Normal at 5% Significance Level					
2616	**Data appear Normal at 5% Significance Level**										
2617											
2618	**Background Statistics Assuming Normal Distribution**										
2619	95% UTL with 90% Coverage				20.56	90% Percentile (z)					16.66
2620	95% UPL (t)				18.84	95% Percentile (z)					17.75
2621	95% USL				18.91	99% Percentile (z)					19.79
2622											
2623	**Gamma GOF Test**										
2624	A-D Test Statistic				0.685	**Anderson-Darling Gamma GOF Test**					
2625	5% A-D Critical Value				0.716	Detected data appear Gamma Distributed at 5% Significance Level					
2626	K-S Test Statistic				0.244	**Kolmogorov-Smirnov Gamma GOF Test**					
2627	5% K-S Critical Value				0.294	Detected data appear Gamma Distributed at 5% Significance Level					
2628	**Detected data appear Gamma Distributed at 5% Significance Level**										
2629											
2630	**Gamma Statistics**										
2631	k hat (MLE)				15.94	k star (bias corrected MLE)					10.04
2632	Theta hat (MLE)				0.804	Theta star (bias corrected MLE)					1.276
2633	nu hat (MLE)				255	nu star (bias corrected)					160.7
2634	MLE Mean (bias corrected)				12.81	MLE Sd (bias corrected)					4.043
2635											
2636	**Background Statistics Assuming Gamma Distribution**										
2637	95% Wilson Hilferty (WH) Approx. Gamma UPL				20.65	90% Percentile					18.19
2638	95% Hawkins Wixley (HW) Approx. Gamma UPL				20.98	95% Percentile					20.11
2639	95% WH Approx. Gamma UTL with 90% Coverage				23.47	99% Percentile					24.04
2640	95% HW Approx. Gamma UTL with 90% Coverage				24.03						
2641	95% WH USL				20.76	95% HW USL					21.1
2642											
2643	**Lognormal GOF Test**										
2644	Shapiro Wilk Test Statistic				0.772	**Shapiro Wilk Lognormal GOF Test**					
2645	5% Shapiro Wilk Critical Value				0.818	Data Not Lognormal at 5% Significance Level					
2646	Lilliefors Test Statistic				0.271	**Lilliefors Lognormal GOF Test**					
2647	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
2648	**Data appear Approximate Lognormal at 5% Significance Level**										
2649											
2650	**Background Statistics assuming Lognormal Distribution**										

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2651				95% UTL with 90% Coverage	26.23					90% Percentile (z)	17.99
2652				95% UPL (t)	22.22					95% Percentile (z)	19.99
2653				95% USL	22.36					99% Percentile (z)	24.36
2654												
2655	**Nonparametric Distribution Free Background Statistics**											
2656	**Data appear Normal at 5% Significance Level**											
2657												
2658	**Nonparametric Upper Limits for Background Threshold Values**											
2659				Order of Statistic, r	8					95% UTL with 90% Coverage	15.9
2660				Approx, f used to compute achieved CC	0.889					Approximate Actual Confidence Coefficient achieved by UTL	0.57
2661										Approximate Sample Size needed to achieve specified CC	29
2662			95% Percentile Bootstrap UTL with 90% Coverage		15.9					95% BCA Bootstrap UTL with 90% Coverage	15.9
2663				95% UPL	15.9					90% Percentile	15.41
2664				90% Chebyshev UPL	22.36					95% Percentile	15.66
2665				95% Chebyshev UPL	26.68					99% Percentile	15.85
2666				95% USL	15.9						
2667												
2668	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
2669	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2670	and consists of observations collected from clean unimpacted locations.											
2671	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2672	represents a background data set and when many onsite observations need to be compared with the BTV.											
2673												
2674	**Lead (0.5 - 2)**											
2675												
2676	**General Statistics**											
2677				Total Number of Observations	8					Number of Distinct Observations	8
2678				Minimum	5.1					First Quartile	11.63
2679				Second Largest	19.3					Median	13.4
2680				Maximum	21.2					Third Quartile	16.83
2681				Mean	13.76					SD	5.205
2682				Coefficient of Variation	0.378					Skewness	-0.204
2683				Mean of logged Data	2.544					SD of logged Data	0.453
2684												
2685	**Critical Values for Background Threshold Values (BTVs)**											
2686				Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
2687												
2688	**Normal GOF Test**											
2689				Shapiro Wilk Test Statistic	0.98					**Shapiro Wilk GOF Test**	
2690				5% Shapiro Wilk Critical Value	0.818					Data appear Normal at 5% Significance Level	
2691				Lilliefors Test Statistic	0.147					**Lilliefors GOF Test**	
2692				5% Lilliefors Critical Value	0.283					Data appear Normal at 5% Significance Level	
2693	**Data appear Normal at 5% Significance Level**											
2694												
2695	**Background Statistics Assuming Normal Distribution**											
2696				95% UTL with 90% Coverage	27.2					90% Percentile (z)	20.43
2697				95% UPL (t)	24.22					95% Percentile (z)	22.32
2698				95% USL	24.34					99% Percentile (z)	25.87
2699												
2700	**Gamma GOF Test**											
2701				A-D Test Statistic	0.258					**Anderson-Darling Gamma GOF Test**	
2702				5% A-D Critical Value	0.718					Detected data appear Gamma Distributed at 5% Significance Level	
2703				K-S Test Statistic	0.198					**Kolmogorov-Smirnov Gamma GOF Test**	
2704				5% K-S Critical Value	0.295					Detected data appear Gamma Distributed at 5% Significance Level	
2705	**Detected data appear Gamma Distributed at 5% Significance Level**											
2706												
2707	**Gamma Statistics**											
2708				k hat (MLE)	6.553					k star (bias corrected MLE)	4.179
2709				Theta hat (MLE)	2.1					Theta star (bias corrected MLE)	3.294
2710				nu hat (MLE)	104.8					nu star (bias corrected)	66.86
2711				MLE Mean (bias corrected)	13.76					MLE Sd (bias corrected)	6.733
2712												
2713	**Background Statistics Assuming Gamma Distribution**											
2714				95% Wilson Hilferty (WH) Approx. Gamma UPL	27.73					90% Percentile	22.79
2715				95% Hawkins Wixley (HW) Approx. Gamma UPL	28.49					95% Percentile	26.37
2716				95% WH Approx. Gamma UTL with 90% Coverage	33.32					99% Percentile	34.02
2717				95% HW Approx. Gamma UTL with 90% Coverage	34.72						
2718				95% WH USL	27.94					95% HW USL	28.71
2719												
2720	**Lognormal GOF Test**											
2721				Shapiro Wilk Test Statistic	0.914					**Shapiro Wilk Lognormal GOF Test**	
2722				5% Shapiro Wilk Critical Value	0.818					Data appear Lognormal at 5% Significance Level	
2723				Lilliefors Test Statistic	0.227					**Lilliefors Lognormal GOF Test**	
2724				5% Lilliefors Critical Value	0.283					Data appear Lognormal at 5% Significance Level	
2725	**Data appear Lognormal at 5% Significance Level**											
2726												
2727	**Background Statistics assuming Lognormal Distribution**											
2728				95% UTL with 90% Coverage	40.97					90% Percentile (z)	22.74
2729				95% UPL (t)	31.62					95% Percentile (z)	26.8
2730				95% USL	31.94					99% Percentile (z)	36.49
2731												
2732	**Nonparametric Distribution Free Background Statistics**											
2733	**Data appear Normal at 5% Significance Level**											
2734												
2735	**Nonparametric Upper Limits for Background Threshold Values**											
2736				Order of Statistic, r	8					95% UTL with 90% Coverage	21.2

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
2737	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
2738							Approximate Sample Size needed to achieve specified CC					29
2739	95% Percentile Bootstrap UTL with 90% Coverage					21.2	95% BCA Bootstrap UTL with 90% Coverage					21.2
2740	95% UPL					21.2	90% Percentile					19.87
2741	90% Chebyshev UPL					30.33	95% Percentile					20.54
2742	95% Chebyshev UPL					37.83	99% Percentile					21.07
2743	95% USL					21.2						
2744												
2745	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
2746	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2747	and consists of observations collected from clean unimpacted locations.											
2748	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2749	represents a background data set and when many onsite observations need to be compared with the BTV.											
2750												
2751	**Lead (10 - 12)**											
2752												
2753	**General Statistics**											
2754	Total Number of Observations					8	Number of Distinct Observations					7
2755	Minimum					3.1	First Quartile					5.775
2756	Second Largest					7.7	Median					6.3
2757	Maximum					7.9	Third Quartile					7.175
2758	Mean					6.15	SD					1.578
2759	Coefficient of Variation					0.257	Skewness					-1.022
2760	Mean of logged Data					1.78	SD of logged Data					0.306
2761												
2762	**Critical Values for Background Threshold Values (BTVs)**											
2763	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
2764												
2765	**Normal GOF Test**											
2766	Shapiro Wilk Test Statistic					0.918	**Shapiro Wilk GOF Test**					
2767	5% Shapiro Wilk Critical Value					0.818	Data appear Normal at 5% Significance Level					
2768	Lilliefors Test Statistic					0.237	**Lilliefors GOF Test**					
2769	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
2770	**Data appear Normal at 5% Significance Level**											
2771												
2772	**Background Statistics Assuming Normal Distribution**											
2773	95% UTL with 90% Coverage					10.23	90% Percentile (z)					8.173
2774	95% UPL (t)					9.322	95% Percentile (z)					8.746
2775	95% USL					9.357	99% Percentile (z)					9.822
2776												
2777	**Gamma GOF Test**											
2778	A-D Test Statistic					0.486	**Anderson-Darling Gamma GOF Test**					
2779	5% A-D Critical Value					0.715	Detected data appear Gamma Distributed at 5% Significance Level					
2780	K-S Test Statistic					0.273	**Kolmogorov-Smirnov Gamma GOF Test**					
2781	5% K-S Critical Value					0.294	Detected data appear Gamma Distributed at 5% Significance Level					
2782	**Detected data appear Gamma Distributed at 5% Significance Level**											
2783												
2784	**Gamma Statistics**											
2785	k hat (MLE)					13.99	k star (bias corrected MLE)					8.83
2786	Theta hat (MLE)					0.439	Theta star (bias corrected MLE)					0.696
2787	nu hat (MLE)					223.9	nu star (bias corrected)					141.3
2788	MLE Mean (bias corrected)					6.15	MLE Sd (bias corrected)					2.07
2789												
2790	**Background Statistics Assuming Gamma Distribution**											
2791	95% Wilson Hilferty (WH) Approx. Gamma UPL					10.2	90% Percentile					8.906
2792	95% Hawkins Wixley (HW) Approx. Gamma UPL					10.36	95% Percentile					9.902
2793	95% WH Approx. Gamma UTL with 90% Coverage					11.67	99% Percentile					11.96
2794	95% HW Approx. Gamma UTL with 90% Coverage					11.95						
2795	95% WH USL					10.25	95% HW USL					10.42
2796												
2797	**Lognormal GOF Test**											
2798	Shapiro Wilk Test Statistic					0.845	**Shapiro Wilk Lognormal GOF Test**					
2799	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
2800	Lilliefors Test Statistic					0.286	**Lilliefors Lognormal GOF Test**					
2801	5% Lilliefors Critical Value					0.283	Data Not Lognormal at 5% Significance Level					
2802	**Data appear Approximate Lognormal at 5% Significance Level**											
2803												
2804	**Background Statistics assuming Lognormal Distribution**											
2805	95% UTL with 90% Coverage					13.06	90% Percentile (z)					8.775
2806	95% UPL (t)					10.96	95% Percentile (z)					9.805
2807	95% USL					11.03	99% Percentile (z)					12.07
2808												
2809	**Nonparametric Distribution Free Background Statistics**											
2810	**Data appear Normal at 5% Significance Level**											
2811												
2812	**Nonparametric Upper Limits for Background Threshold Values**											
2813	Order of Statistic, r					8	95% UTL with 90% Coverage					7.9
2814	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
2815							Approximate Sample Size needed to achieve specified CC					29
2816	95% Percentile Bootstrap UTL with 90% Coverage					7.9	95% BCA Bootstrap UTL with 90% Coverage					7.9
2817	95% UPL					7.9	90% Percentile					7.76
2818	90% Chebyshev UPL					11.17	95% Percentile					7.83
2819	95% Chebyshev UPL					13.45	99% Percentile					7.886
2820	95% USL					7.9						
2821												
2822	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
2823	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2824	and consists of observations collected from clean unimpacted locations.											
2825	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2826	represents a background data set and when many onsite observations need to be compared with the BTV.											
2827												
2828	**Magnesium (0 - 0.5)**											
2829												
2830	**General Statistics**											
2831					Total Number of Observations	8				Number of Distinct Observations	8	
2832					Minimum	2940				First Quartile	7338	
2833					Second Largest	11200				Median	8765	
2834					Maximum	11400				Third Quartile	10375	
2835					Mean	8455				SD	2744	
2836					Coefficient of Variation	0.325				Skewness	-1.114	
2837					Mean of logged Data	8.975				SD of logged Data	0.437	
2838												
2839	**Critical Values for Background Threshold Values (BTVs)**											
2840					Tolerance Factor K (For UTL)	2.582				d2max (for USL)	2.032	
2841												
2842	**Normal GOF Test**											
2843					Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**					
2844					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
2845					Lilliefors Test Statistic	0.177	**Lilliefors GOF Test**					
2846					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
2847	**Data appear Normal at 5% Significance Level**											
2848												
2849	**Background Statistics Assuming Normal Distribution**											
2850				95% UTL with	90% Coverage	15540				90% Percentile (z)	11972	
2851					95% UPL (t)	13969				95% Percentile (z)	12969	
2852					95% USL	14030				99% Percentile (z)	14839	
2853												
2854	**Gamma GOF Test**											
2855					A-D Test Statistic	0.575	**Anderson-Darling Gamma GOF Test**					
2856					5% A-D Critical Value	0.717	Detected data appear Gamma Distributed at 5% Significance Level					
2857					K-S Test Statistic	0.231	**Kolmogorov-Smirnov Gamma GOF Test**					
2858					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
2859	**Detected data appear Gamma Distributed at 5% Significance Level**											
2860												
2861	**Gamma Statistics**											
2862					k hat (MLE)	7.572				k star (bias corrected MLE)	4.816	
2863					Theta hat (MLE)	1117				Theta star (bias corrected MLE)	1756	
2864					nu hat (MLE)	121.2				nu star (bias corrected)	77.06	
2865					MLE Mean (bias corrected)	8455				MLE Sd (bias corrected)	3853	
2866												
2867	**Background Statistics Assuming Gamma Distribution**											
2868					95% Wilson Hilferty (WH) Approx. Gamma UPL	16344				90% Percentile	13614	
2869					95% Hawkins Wixley (HW) Approx. Gamma UPL	16856				95% Percentile	15624	
2870				95% WH Approx. Gamma UTL with	90% Coverage	19429				99% Percentile	19878	
2871				95% HW Approx. Gamma UTL with	90% Coverage	20331						
2872					95% WH USL	16457				95% HW USL	16981	
2873												
2874	**Lognormal GOF Test**											
2875					Shapiro Wilk Test Statistic	0.786	**Shapiro Wilk Lognormal GOF Test**					
2876					5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
2877					Lilliefors Test Statistic	0.269	**Lilliefors Lognormal GOF Test**					
2878					5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level					
2879	**Data appear Approximate Lognormal at 5% Significance Level**											
2880												
2881	**Background Statistics assuming Lognormal Distribution**											
2882				95% UTL with	90% Coverage	24397				90% Percentile (z)	13829	
2883					95% UPL (t)	19002				95% Percentile (z)	16205	
2884					95% USL	19186				99% Percentile (z)	21821	
2885												
2886	**Nonparametric Distribution Free Background Statistics**											
2887	**Data appear Normal at 5% Significance Level**											
2888												
2889	**Nonparametric Upper Limits for Background Threshold Values**											
2890					Order of Statistic, r	8				95% UTL with 90% Coverage	11400	
2891					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL	0.57	
2892										Approximate Sample Size needed to achieve specified CC	29	
2893				95% Percentile Bootstrap UTL with	90% Coverage	11400				95% BCA Bootstrap UTL with 90% Coverage	11400	
2894					95% UPL	11400				90% Percentile	11260	
2895					90% Chebyshev UPL	17187				95% Percentile	11330	
2896					95% Chebyshev UPL	21142				99% Percentile	11386	
2897					95% USL	11400						
2898												
2899	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
2900	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2901	and consists of observations collected from clean unimpacted locations.											
2902	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2903	represents a background data set and when many onsite observations need to be compared with the BTV.											
2904												
2905	**Magnesium (0.5 - 2)**											
2906												
2907	**General Statistics**											
2908					Total Number of Observations	8				Number of Distinct Observations	8	

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
2909					Minimum	2950					First Quartile	7780
2910					Second Largest	10600					Median	9260
2911					Maximum	10700					Third Quartile	9730
2912					Mean	8426					SD	2505
2913					Coefficient of Variation	0.297					Skewness	-1.718
2914					Mean of logged Data	8.978					SD of logged Data	0.421
2915												
2916	**Critical Values for Background Threshold Values (BTVs)**											
2917					Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
2918												
2919	**Normal GOF Test**											
2920					Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk GOF Test**					
2921					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
2922					Lilliefors Test Statistic	0.252	**Lilliefors GOF Test**					
2923					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
2924	**Data appear Normal at 5% Significance Level**											
2925												
2926	**Background Statistics Assuming Normal Distribution**											
2927				95% UTL with	90% Coverage	14894					90% Percentile (z)	11637
2928					95% UPL (t)	13460					95% Percentile (z)	12547
2929					95% USL	13516					99% Percentile (z)	14254
2930												
2931	**Gamma GOF Test**											
2932					A-D Test Statistic	0.931	**Anderson-Darling Gamma GOF Test**					
2933					5% A-D Critical Value	0.716	Data Not Gamma Distributed at 5% Significance Level					
2934					K-S Test Statistic	0.275	**Kolmogorov-Smirnov Gamma GOF Test**					
2935					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
2936	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
2937												
2938	**Gamma Statistics**											
2939					k hat (MLE)	8.368					k star (bias corrected MLE)	5.314
2940					Theta hat (MLE)	1007					Theta star (bias corrected MLE)	1586
2941					nu hat (MLE)	133.9					nu star (bias corrected)	85.02
2942					MLE Mean (bias corrected)	8426					MLE Sd (bias corrected)	3655
2943												
2944	**Background Statistics Assuming Gamma Distribution**											
2945					95% Wilson Hilferty (WH) Approx. Gamma UPL	15846					90% Percentile	13318
2946					95% Hawkins Wixley (HW) Approx. Gamma UPL	16353					95% Percentile	15198
2947					95% WH Approx. Gamma UTL with 90% Coverage	18709					99% Percentile	19159
2948					95% HW Approx. Gamma UTL with 90% Coverage	19583						
2949					95% WH USL	15951					95% HW USL	16470
2950												
2951	**Lognormal GOF Test**											
2952					Shapiro Wilk Test Statistic	0.699	**Shapiro Wilk Lognormal GOF Test**					
2953					5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
2954					Lilliefors Test Statistic	0.29	**Lilliefors Lognormal GOF Test**					
2955					5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level					
2956	**Data Not Lognormal at 5% Significance Level**											
2957												
2958	**Background Statistics assuming Lognormal Distribution**											
2959				95% UTL with	90% Coverage	23488					90% Percentile (z)	13592
2960					95% UPL (t)	18462					95% Percentile (z)	15836
2961					95% USL	18634					99% Percentile (z)	21094
2962												
2963	**Nonparametric Distribution Free Background Statistics**											
2964	**Data appear Normal at 5% Significance Level**											
2965												
2966	**Nonparametric Upper Limits for Background Threshold Values**											
2967					Order of Statistic, r	8					95% UTL with 90% Coverage	10700
2968					Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
2969							Approximate Sample Size needed to achieve specified CC					29
2970					95% Percentile Bootstrap UTL with 90% Coverage	10700					95% BCA Bootstrap UTL with 90% Coverage	10700
2971					95% UPL	10700					90% Percentile	10630
2972					90% Chebyshev UPL	16397					95% Percentile	10665
2973					95% Chebyshev UPL	20008					99% Percentile	10693
2974					95% USL	10700						
2975												
2976	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
2977	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
2978	and consists of observations collected from clean unimpacted locations.											
2979	The use of USL tends to provide a balance between false positives and false negatives provided the data											
2980	represents a background data set and when many onsite observations need to be compared with the BTV.											
2981												
2982	**Magnesium (10 - 12)**											
2983												
2984	**General Statistics**											
2985					Total Number of Observations	8					Number of Distinct Observations	8
2986					Minimum	6060					First Quartile	7578
2987					Second Largest	11400					Median	8970
2988					Maximum	12100					Third Quartile	11025
2989					Mean	9084					SD	2286
2990					Coefficient of Variation	0.252					Skewness	-0.0943
2991					Mean of logged Data	9.085					SD of logged Data	0.263
2992												
2993	**Critical Values for Background Threshold Values (BTVs)**											
2994					Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

2995											
2996	**Normal GOF Test**										
2997	Shapiro Wilk Test Statistic				0.933	**Shapiro Wilk GOF Test**					
2998	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level					
2999	Lilliefors Test Statistic				0.162	**Lilliefors GOF Test**					
3000	5% Lilliefors Critical Value				0.283	Data appear Normal at 5% Significance Level					
3001	**Data appear Normal at 5% Significance Level**										
3002											
3003	**Background Statistics Assuming Normal Distribution**										
3004	95% UTL with 90% Coverage				14987	90% Percentile (z)					12014
3005	95% UPL (t)				13678	95% Percentile (z)					12844
3006	95% USL				13729	99% Percentile (z)					14403
3007											
3008	**Gamma GOF Test**										
3009	A-D Test Statistic				0.309	**Anderson-Darling Gamma GOF Test**					
3010	5% A-D Critical Value				0.716	Detected data appear Gamma Distributed at 5% Significance Level					
3011	K-S Test Statistic				0.18	**Kolmogorov-Smirnov Gamma GOF Test**					
3012	5% K-S Critical Value				0.294	Detected data appear Gamma Distributed at 5% Significance Level					
3013	**Detected data appear Gamma Distributed at 5% Significance Level**										
3014											
3015	**Gamma Statistics**										
3016	k hat (MLE)				17.16	k star (bias corrected MLE)					10.81
3017	Theta hat (MLE)				529.5	Theta star (bias corrected MLE)					840.7
3018	nu hat (MLE)				274.5	nu star (bias corrected)					172.9
3019	MLE Mean (bias corrected)				9084	MLE Sd (bias corrected)					2763
3020											
3021	**Background Statistics Assuming Gamma Distribution**										
3022	95% Wilson Hilferty (WH) Approx. Gamma UPL				14420	90% Percentile					12756
3023	95% Hawkins Wixley (HW) Approx. Gamma UPL				14544	95% Percentile					14055
3024	95% WH Approx. Gamma UTL with 90% Coverage				16326	99% Percentile					16713
3025	95% HW Approx. Gamma UTL with 90% Coverage				16562						
3026	95% WH USL				14491	95% HW USL					14619
3027											
3028	**Lognormal GOF Test**										
3029	Shapiro Wilk Test Statistic				0.919	**Shapiro Wilk Lognormal GOF Test**					
3030	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
3031	Lilliefors Test Statistic				0.164	**Lilliefors Lognormal GOF Test**					
3032	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
3033	**Data appear Lognormal at 5% Significance Level**										
3034											
3035	**Background Statistics assuming Lognormal Distribution**										
3036	95% UTL with 90% Coverage				17415	90% Percentile (z)					12363
3037	95% UPL (t)				14977	95% Percentile (z)					13605
3038	95% USL				15064	99% Percentile (z)					16280
3039											
3040	**Nonparametric Distribution Free Background Statistics**										
3041	**Data appear Normal at 5% Significance Level**										
3042											
3043	**Nonparametric Upper Limits for Background Threshold Values**										
3044	Order of Statistic, r				8	95% UTL with 90% Coverage					12100
3045	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
3046						Approximate Sample Size needed to achieve specified CC					29
3047	95% Percentile Bootstrap UTL with 90% Coverage				12100	95% BCA Bootstrap UTL with 90% Coverage					12100
3048	95% UPL				12100	90% Percentile					11610
3049	90% Chebyshev UPL				16359	95% Percentile					11855
3050	95% Chebyshev UPL				19654	99% Percentile					12051
3051	95% USL				12100						
3052											
3053	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
3054	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
3055	and consists of observations collected from clean unimpacted locations.										
3056	The use of USL tends to provide a balance between false positives and false negatives provided the data										
3057	represents a background data set and when many onsite observations need to be compared with the BTV.										
3058											
3059	**Manganese (0 - 0.5)**										
3060											
3061	**General Statistics**										
3062	Total Number of Observations				8	Number of Distinct Observations					8
3063	Minimum				49.4	First Quartile					315.8
3064	Second Largest				529	Median					404.5
3065	Maximum				576	Third Quartile					484.8
3066	Mean				375.3	SD					172.6
3067	Coefficient of Variation				0.46	Skewness					-0.938
3068	Mean of logged Data				5.741	SD of logged Data					0.802
3069											
3070	**Critical Values for Background Threshold Values (BTVs)**										
3071	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032
3072											
3073	**Normal GOF Test**										
3074	Shapiro Wilk Test Statistic				0.937	**Shapiro Wilk GOF Test**					
3075	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level					
3076	Lilliefors Test Statistic				0.185	**Lilliefors GOF Test**					
3077	5% Lilliefors Critical Value				0.283	Data appear Normal at 5% Significance Level					
3078	**Data appear Normal at 5% Significance Level**										
3079											
3080	**Background Statistics Assuming Normal Distribution**										

Preliminary Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3081	95% UTL with 90% Coverage				821				90% Percentile (z)		596.5	
3082	95% UPL (t)				722.1				95% Percentile (z)		659.2	
3083	95% USL				726				99% Percentile (z)		776.8	
3084												
3085	**Gamma GOF Test**											
3086	A-D Test Statistic				0.688	**Anderson-Darling Gamma GOF Test**						
3087	5% A-D Critical Value				0.722	Detected data appear Gamma Distributed at 5% Significance Level						
3088	K-S Test Statistic				0.278	**Kolmogorov-Smirnov Gamma GOF Test**						
3089	5% K-S Critical Value				0.296	Detected data appear Gamma Distributed at 5% Significance Level						
3090	**Detected data appear Gamma Distributed at 5% Significance Level**											
3091												
3092	**Gamma Statistics**											
3093	k hat (MLE)				2.831	k star (bias corrected MLE)					1.853	
3094	Theta hat (MLE)				132.6	Theta star (bias corrected MLE)					202.6	
3095	nu hat (MLE)				45.29	nu star (bias corrected)					29.64	
3096	MLE Mean (bias corrected)				375.3	MLE Sd (bias corrected)					275.7	
3097												
3098	**Background Statistics Assuming Gamma Distribution**											
3099	95% Wilson Hilferty (WH) Approx. Gamma UPL				998.5	90% Percentile					743.3	
3100	95% Hawkins Wixley (HW) Approx. Gamma UPL				1081	95% Percentile					912.2	
3101	95% WH Approx. Gamma UTL with 90% Coverage				1280	99% Percentile					1289	
3102	95% HW Approx. Gamma UTL with 90% Coverage				1432							
3103	95% WH USL				1009	95% HW USL					1093	
3104												
3105	**Lognormal GOF Test**											
3106	Shapiro Wilk Test Statistic				0.741	**Shapiro Wilk Lognormal GOF Test**						
3107	5% Shapiro Wilk Critical Value				0.818	Data Not Lognormal at 5% Significance Level						
3108	Lilliefors Test Statistic				0.304	**Lilliefors Lognormal GOF Test**						
3109	5% Lilliefors Critical Value				0.283	Data Not Lognormal at 5% Significance Level						
3110	**Data Not Lognormal at 5% Significance Level**											
3111												
3112	**Background Statistics assuming Lognormal Distribution**											
3113	95% UTL with 90% Coverage				2466	90% Percentile (z)					869.6	
3114	95% UPL (t)				1558	95% Percentile (z)					1164	
3115	95% USL				1586	99% Percentile (z)					2009	
3116												
3117	**Nonparametric Distribution Free Background Statistics**											
3118	**Data appear Normal at 5% Significance Level**											
3119												
3120	**Nonparametric Upper Limits for Background Threshold Values**											
3121	Order of Statistic, r				8	95% UTL with 90% Coverage					576	
3122	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57	
3123						Approximate Sample Size needed to achieve specified CC					29	
3124	95% Percentile Bootstrap UTL with 90% Coverage				576	95% BCA Bootstrap UTL with 90% Coverage					576	
3125	95% UPL				576	90% Percentile					543.1	
3126	90% Chebyshev UPL				924.5	95% Percentile					559.6	
3127	95% Chebyshev UPL				1173	99% Percentile					572.7	
3128	95% USL				576							
3129												
3130	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
3131	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
3132	and consists of observations collected from clean unimpacted locations.											
3133	The use of USL tends to provide a balance between false positives and false negatives provided the data											
3134	represents a background data set and when many onsite observations need to be compared with the BTV.											
3135												
3136	**Manganese (0.5 - 2)**											
3137												
3138	**General Statistics**											
3139	Total Number of Observations				8	Number of Distinct Observations					7	
3140	Minimum				44.4	First Quartile					382.3	
3141	Second Largest				558	Median					458	
3142	Maximum				659	Third Quartile					486	
3143	Mean				418.3	SD					184.1	
3144	Coefficient of Variation				0.44	Skewness					-1.135	
3145	Mean of logged Data				5.838	SD of logged Data					0.858	
3146												
3147	**Critical Values for Background Threshold Values (BTVs)**											
3148	Tolerance Factor K (For UTL)				2.582	d2max (for USL)					2.032	
3149												
3150	**Normal GOF Test**											
3151	Shapiro Wilk Test Statistic				0.908	**Shapiro Wilk GOF Test**						
3152	5% Shapiro Wilk Critical Value				0.818	Data appear Normal at 5% Significance Level						
3153	Lilliefors Test Statistic				0.234	**Lilliefors GOF Test**						
3154	5% Lilliefors Critical Value				0.283	Data appear Normal at 5% Significance Level						
3155	**Data appear Normal at 5% Significance Level**											
3156												
3157	**Background Statistics Assuming Normal Distribution**											
3158	95% UTL with 90% Coverage				893.8	90% Percentile (z)					654.3	
3159	95% UPL (t)				788.3	95% Percentile (z)					721.2	
3160	95% USL				792.4	99% Percentile (z)					846.7	
3161												
3162	**Gamma GOF Test**											
3163	A-D Test Statistic				0.989	**Anderson-Darling Gamma GOF Test**						
3164	5% A-D Critical Value				0.722	Data Not Gamma Distributed at 5% Significance Level						
3165	K-S Test Statistic				0.32	**Kolmogorov-Smirnov Gamma GOF Test**						
3166	5% K-S Critical Value				0.297	Data Not Gamma Distributed at 5% Significance Level						

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
3167	**Data Not Gamma Distributed at 5% Significance Level**											
3168												
3169	**Gamma Statistics**											
3170					k hat (MLE)	2.682			k star (bias corrected MLE)			1.759
3171					Theta hat (MLE)	156			Theta star (bias corrected MLE)			237.8
3172					nu hat (MLE)	42.91			nu star (bias corrected)			28.15
3173					MLE Mean (bias corrected)	418.3			MLE Sd (bias corrected)			315.4
3174												
3175	**Background Statistics Assuming Gamma Distribution**											
3176				95% Wilson Hilferty (WH) Approx. Gamma UPL		1133			90% Percentile			838.7
3177				95% Hawkins Wixley (HW) Approx. Gamma UPL		1242			95% Percentile			1034
3178				95% WH Approx. Gamma UTL with	90% Coverage	1458			99% Percentile			1470
3179				95% HW Approx. Gamma UTL with	90% Coverage	1656						
3180					95% WH USL	1144			95% HW USL			1256
3181												
3182	**Lognormal GOF Test**											
3183					Shapiro Wilk Test Statistic	0.667			**Shapiro Wilk Lognormal GOF Test**			
3184					5% Shapiro Wilk Critical Value	0.818			Data Not Lognormal at 5% Significance Level			
3185					Lilliefors Test Statistic	0.333			**Lilliefors Lognormal GOF Test**			
3186					5% Lilliefors Critical Value	0.283			Data Not Lognormal at 5% Significance Level			
3187	**Data Not Lognormal at 5% Significance Level**											
3188												
3189	**Background Statistics assuming Lognormal Distribution**											
3190				95% UTL with	90% Coverage	3146			90% Percentile (z)			1031
3191					95% UPL (t)	1925			95% Percentile (z)			1408
3192					95% USL	1962			99% Percentile (z)			2526
3193												
3194	**Nonparametric Distribution Free Background Statistics**											
3195	**Data appear Normal at 5% Significance Level**											
3196												
3197	**Nonparametric Upper Limits for Background Threshold Values**											
3198					Order of Statistic, r	8			95% UTL with	90% Coverage		659
3199					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL			0.57
3200									Approximate Sample Size needed to achieve specified CC			29
3201				95% Percentile Bootstrap UTL with	90% Coverage	659			95% BCA Bootstrap UTL with	90% Coverage		659
3202					95% UPL	659			90% Percentile			588.3
3203					90% Chebyshev UPL	1004			95% Percentile			623.7
3204					95% Chebyshev UPL	1270			99% Percentile			651.9
3205					95% USL	659						
3206												
3207	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
3208	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
3209	and consists of observations collected from clean unimpacted locations.											
3210	The use of USL tends to provide a balance between false positives and false negatives provided the data											
3211	represents a background data set and when many onsite observations need to be compared with the BTV.											
3212												
3213	**Manganese (10 - 12)**											
3214												
3215	**General Statistics**											
3216					Total Number of Observations	8			Number of Distinct Observations			8
3217					Minimum	115			First Quartile			327.5
3218					Second Largest	494			Median			410
3219					Maximum	642			Third Quartile			447.5
3220					Mean	386.1			SD			160.9
3221					Coefficient of Variation	0.417			Skewness			-0.277
3222					Mean of logged Data	5.852			SD of logged Data			0.537
3223												
3224	**Critical Values for Background Threshold Values (BTVs)**											
3225					Tolerance Factor K (For UTL)	2.582			d2max (for USL)			2.032
3226												
3227	**Normal GOF Test**											
3228					Shapiro Wilk Test Statistic	0.965			**Shapiro Wilk GOF Test**			
3229					5% Shapiro Wilk Critical Value	0.818			Data appear Normal at 5% Significance Level			
3230					Lilliefors Test Statistic	0.19			**Lilliefors GOF Test**			
3231					5% Lilliefors Critical Value	0.283			Data appear Normal at 5% Significance Level			
3232	**Data appear Normal at 5% Significance Level**											
3233												
3234	**Background Statistics Assuming Normal Distribution**											
3235				95% UTL with	90% Coverage	801.5			90% Percentile (z)			592.3
3236					95% UPL (t)	709.4			95% Percentile (z)			650.7
3237					95% USL	712.9			99% Percentile (z)			760.3
3238												
3239	**Gamma GOF Test**											
3240					A-D Test Statistic	0.443			**Anderson-Darling Gamma GOF Test**			
3241					5% A-D Critical Value	0.719			Detected data appear Gamma Distributed at 5% Significance Level			
3242					K-S Test Statistic	0.254			**Kolmogorov-Smirnov Gamma GOF Test**			
3243					5% K-S Critical Value	0.295			Detected data appear Gamma Distributed at 5% Significance Level			
3244	**Detected data appear Gamma Distributed at 5% Significance Level**											
3245												
3246	**Gamma Statistics**											
3247					k hat (MLE)	4.955			k star (bias corrected MLE)			3.18
3248					Theta hat (MLE)	77.93			Theta star (bias corrected MLE)			121.4
3249					nu hat (MLE)	79.27			nu star (bias corrected)			50.88
3250					MLE Mean (bias corrected)	386.1			MLE Sd (bias corrected)			216.5
3251												
3252	**Background Statistics Assuming Gamma Distribution**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3253	95% Wilson Hilferty (WH) Approx. Gamma UPL				847.7					90% Percentile	676.5
3254	95% Hawkins Wixley (HW) Approx. Gamma UPL				880.1					95% Percentile	797
3255	95% WH Approx. Gamma UTL with 90% Coverage				1040					99% Percentile	1057
3256	95% HW Approx. Gamma UTL with 90% Coverage				1100						
3257	95% WH USL				854.6					95% HW USL	887.9
3258											
3259	**Lognormal GOF Test**										
3260	Shapiro Wilk Test Statistic				0.869	**Shapiro Wilk Lognormal GOF Test**					
3261	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
3262	Lilliefors Test Statistic				0.28	**Lilliefors Lognormal GOF Test**					
3263	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
3264	**Data appear Lognormal at 5% Significance Level**										
3265											
3266	**Background Statistics assuming Lognormal Distribution**										
3267	95% UTL with 90% Coverage				1393	90% Percentile (z)	692.7				
3268	95% UPL (t)				1024	95% Percentile (z)	842.1				
3269	95% USL				1037	99% Percentile (z)	1215				
3270											
3271	**Nonparametric Distribution Free Background Statistics**										
3272	**Data appear Normal at 5% Significance Level**										
3273											
3274	**Nonparametric Upper Limits for Background Threshold Values**										
3275	Order of Statistic, r				8	95% UTL with 90% Coverage	642				
3276	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL	0.57				
3277						Approximate Sample Size needed to achieve specified CC	29				
3278	95% Percentile Bootstrap UTL with 90% Coverage				642	95% BCA Bootstrap UTL with 90% Coverage	642				
3279	95% UPL				642	90% Percentile	538.4				
3280	90% Chebyshev UPL				898	95% Percentile	590.2				
3281	95% Chebyshev UPL				1130	99% Percentile	631.6				
3282	95% USL				642						
3283											
3284	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
3285	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
3286	and consists of observations collected from clean unimpacted locations.										
3287	The use of USL tends to provide a balance between false positives and false negatives provided the data										
3288	represents a background data set and when many onsite observations need to be compared with the BTV.										
3289											
3290	**Mercury (0 - 0.5)**										
3291											
3292	**General Statistics**										
3293	Total Number of Observations				8	Number of Missing Observations	0				
3294	Number of Distinct Observations				7						
3295	Number of Detects				7	Number of Non-Detects	1				
3296	Number of Distinct Detects				7	Number of Distinct Non-Detects	1				
3297	Minimum Detect				0.013	Minimum Non-Detect	0.019				
3298	Maximum Detect				0.036	Maximum Non-Detect	0.019				
3299	Variance Detected				6.9905E-5	Percent Non-Detects	12.5%				
3300	Mean Detected				0.0237	SD Detected	0.00836				
3301	Mean of Detected Logged Data				-3.796	SD of Detected Logged Data	0.359				
3302											
3303	**Critical Values for Background Threshold Values (BTVs)**										
3304	Tolerance Factor K (For UTL)				2.582	d2max (for USL)	2.032				
3305											
3306	**Normal GOF Test on Detects Only**										
3307	Shapiro Wilk Test Statistic				0.941	**Shapiro Wilk GOF Test**					
3308	5% Shapiro Wilk Critical Value				0.803	Detected Data appear Normal at 5% Significance Level					
3309	Lilliefors Test Statistic				0.199	**Lilliefors GOF Test**					
3310	5% Lilliefors Critical Value				0.304	Detected Data appear Normal at 5% Significance Level					
3311	**Detected Data appear Normal at 5% Significance Level**										
3312											
3313	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**										
3314	KM Mean				0.0227	KM SD	0.00778				
3315	95% UTL90% Coverage				0.0428	95% KM UPL (t)	0.0383				
3316	90% KM Percentile (z)				0.0327	95% KM Percentile (z)	0.0355				
3317	99% KM Percentile (z)				0.0408	95% KM USL	0.0385				
3318											
3319	**DL/2 Substitution Background Statistics Assuming Normal Distribution**										
3320	Mean				0.0219	SD	0.00923				
3321	95% UTL90% Coverage				0.0458	95% UPL (t)	0.0405				
3322	90% Percentile (z)				0.0338	95% Percentile (z)	0.0371				
3323	99% Percentile (z)				0.0434	95% USL	0.0407				
3324	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**										
3325											
3326	**Gamma GOF Tests on Detected Observations Only**										
3327	A-D Test Statistic				0.24	**Anderson-Darling GOF Test**					
3328	5% A-D Critical Value				0.709	Detected data appear Gamma Distributed at 5% Significance Level					
3329	K-S Test Statistic				0.172	**Kolmogorov-Smirnov GOF**					
3330	5% K-S Critical Value				0.312	Detected data appear Gamma Distributed at 5% Significance Level					
3331	**Detected data appear Gamma Distributed at 5% Significance Level**										
3332											
3333	**Gamma Statistics on Detected Data Only**										
3334	k hat (MLE)				9.371	k star (bias corrected MLE)	5.45				
3335	Theta hat (MLE)				0.00253	Theta star (bias corrected MLE)	0.00435				
3336	nu hat (MLE)				131.2	nu star (bias corrected)	76.3				
3337	MLE Mean (bias corrected)				0.0237						
3338	MLE Sd (bias corrected)				0.0102	95% Percentile of Chisquare (2kstar)	19.54				

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3339											
3340	**Gamma ROS Statistics using Imputed Non-Detects**										
3341	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
3342	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
3343	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
3344	This is especially true when the sample size is small.										
3345	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
3346					Minimum	0.013			Mean	0.0225	
3347					Maximum	0.036			Median	0.02	
3348					SD	0.00844			CV	0.375	
3349					k hat (MLE)	8.47			k star (bias corrected MLE)	5.377	
3350					Theta hat (MLE)	0.00266			Theta star (bias corrected MLE)	0.00419	
3351					nu hat (MLE)	135.5			nu star (bias corrected)	86.04	
3352					MLE Mean (bias corrected)	0.0225			MLE Sd (bias corrected)	0.00971	
3353					95% Percentile of Chisquare (2kstar)	19.34			90% Percentile	0.0355	
3354					95% Percentile	0.0405			99% Percentile	0.051	
3355	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**										
3356	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
3357				WH	HW				WH	HW	
3358			95% Approx. Gamma UTL with 90% Coverage	0.0499	0.0509			95% Approx. Gamma UPL	0.0422	0.0427	
3359			95% Gamma USL	0.0425	0.043						
3360											
3361	**Estimates of Gamma Parameters using KM Estimates**										
3362					Mean (KM)	0.0227			SD (KM)	0.00778	
3363					Variance (KM)	6.0590E-5			SE of Mean (KM)	0.003	
3364					k hat (KM)	8.495			k star (KM)	5.393	
3365					nu hat (KM)	135.9			nu star (KM)	86.29	
3366					theta hat (KM)	0.00267			theta star (KM)	0.00421	
3367					80% gamma percentile (KM)	0.0302			90% gamma percentile (KM)	0.0358	
3368					95% gamma percentile (KM)	0.0408			99% gamma percentile (KM)	0.0513	
3369											
3370	**The following statistics are computed using gamma distribution and KM estimates**										
3371	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
3372				WH	HW				WH	HW	
3373			95% Approx. Gamma UTL with 90% Coverage	0.0495	0.0506			95% Approx. Gamma UPL	0.0405	0.041	
3374			95% KM Gamma Percentile	0.0366	0.0368			95% Gamma USL	0.0408	0.0412	
3375											
3376	**Lognormal GOF Test on Detected Observations Only**										
3377					Shapiro Wilk Test Statistic	0.963			**Shapiro Wilk GOF Test**		
3378					5% Shapiro Wilk Critical Value	0.803			Detected Data appear Lognormal at 5% Significance Level		
3379					Lilliefors Test Statistic	0.146			**Lilliefors GOF Test**		
3380					5% Lilliefors Critical Value	0.304			Detected Data appear Lognormal at 5% Significance Level		
3381	**Detected Data appear Lognormal at 5% Significance Level**										
3382											
3383	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**										
3384					Mean in Original Scale	0.0226			Mean in Log Scale	-3.849	
3385					SD in Original Scale	0.00837			SD in Log Scale	0.364	
3386					95% UTL90% Coverage	0.0546			95% BCA UTL90% Coverage	0.036	
3387					95% Bootstrap (%) UTL90% Coverage	0.036			95% UPL (t)	0.0443	
3388					90% Percentile (z)	0.034			95% Percentile (z)	0.0388	
3389					99% Percentile (z)	0.0497			95% USL	0.0447	
3390											
3391	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
3392					KM Mean of Logged Data	-3.844			95% KM UTL (Lognormal)90% Coverage	0.0516	
3393					KM SD of Logged Data	0.341			95% KM UPL (Lognormal)	0.0424	
3394					95% KM Percentile Lognormal (z)	0.0375			95% KM USL (Lognormal)	0.0428	
3395											
3396	**Background DL/2 Statistics Assuming Lognormal Distribution**										
3397					Mean in Original Scale	0.0219			Mean in Log Scale	-3.904	
3398					SD in Original Scale	0.00923			SD in Log Scale	0.45	
3399					95% UTL90% Coverage	0.0645			95% UPL (t)	0.0499	
3400					90% Percentile (z)	0.0359			95% Percentile (z)	0.0423	
3401					99% Percentile (z)	0.0575			95% USL	0.0504	
3402	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**										
3403											
3404	**Nonparametric Distribution Free Background Statistics**										
3405	**Data appear to follow a Discernible Distribution at 5% Significance Level**										
3406											
3407	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**										
3408					Order of Statistic, r	8			95% UTL with90% Coverage	0.036	
3409					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL	0.57	
3410					Approximate Sample Size needed to achieve specified CC	29			95% UPL	0.036	
3411					95% USL	0.036			95% KM Chebyshev UPL	0.0587	
3412											
3413	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
3414	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
3415	and consists of observations collected from clean unimpacted locations.										
3416	The use of USL tends to provide a balance between false positives and false negatives provided the data										
3417	represents a background data set and when many onsite observations need to be compared with the BTV.										
3418											
3419	**Mercury (0.5 - 2)**										
3420											
3421	**General Statistics**										
3422					Total Number of Observations	8			Number of Missing Observations	0	
3423					Number of Distinct Observations	6					
3424					Number of Detects	6			Number of Non-Detects	2	

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
3425	Number of Distinct Detects					5	Number of Distinct Non-Detects					2
3426	Minimum Detect					0.016	Minimum Non-Detect					0.013
3427	Maximum Detect					0.039	Maximum Non-Detect					0.017
3428	Variance Detected					9.1867E-5	Percent Non-Detects					25%
3429	Mean Detected					0.0237	SD Detected					0.00958
3430	Mean of Detected Logged Data					-3.806	SD of Detected Logged Data					0.375
3431												
3432	**Critical Values for Background Threshold Values (BTVs)**											
3433	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
3434												
3435	**Normal GOF Test on Detects Only**											
3436	Shapiro Wilk Test Statistic					0.815	**Shapiro Wilk GOF Test**					
3437	5% Shapiro Wilk Critical Value					0.788	Detected Data appear Normal at 5% Significance Level					
3438	Lilliefors Test Statistic					0.276	**Lilliefors GOF Test**					
3439	5% Lilliefors Critical Value					0.325	Detected Data appear Normal at 5% Significance Level					
3440	**Detected Data appear Normal at 5% Significance Level**											
3441												
3442	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
3443	KM Mean					0.0212	KM SD					0.00873
3444	95% UTL90% Coverage					0.0437	95% KM UPL (t)					0.0387
3445	90% KM Percentile (z)					0.0324	95% KM Percentile (z)					0.0356
3446	99% KM Percentile (z)					0.0415	95% KM USL					0.0389
3447												
3448	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
3449	Mean					0.0196	SD					0.011
3450	95% UTL90% Coverage					0.0481	95% UPL (t)					0.0418
3451	90% Percentile (z)					0.0338	95% Percentile (z)					0.0378
3452	99% Percentile (z)					0.0453	95% USL					0.0421
3453	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
3454												
3455	**Gamma GOF Tests on Detected Observations Only**											
3456	A-D Test Statistic					0.592	**Anderson-Darling GOF Test**					
3457	5% A-D Critical Value					0.698	Detected data appear Gamma Distributed at 5% Significance Level					
3458	K-S Test Statistic					0.282	**Kolmogorov-Smirnov GOF**					
3459	5% K-S Critical Value					0.333	Detected data appear Gamma Distributed at 5% Significance Level					
3460	**Detected data appear Gamma Distributed at 5% Significance Level**											
3461												
3462	**Gamma Statistics on Detected Data Only**											
3463	k hat (MLE)					8.237	k star (bias corrected MLE)					4.23
3464	Theta hat (MLE)					0.00287	Theta star (bias corrected MLE)					0.0056
3465	nu hat (MLE)					98.84	nu star (bias corrected)					50.76
3466	MLE Mean (bias corrected)					0.0237						
3467	MLE Sd (bias corrected)					0.0115	95% Percentile of Chisquare (2kstar)					16.16
3468												
3469	**Gamma ROS Statistics using Imputed Non-Detects**											
3470	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
3471	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
3472	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
3473	This is especially true when the sample size is small.											
3474	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
3475	Minimum					0.01	Mean					0.0203
3476	Maximum					0.039	Median					0.017
3477	SD					0.0103	CV					0.508
3478	k hat (MLE)					4.882	k star (bias corrected MLE)					3.134
3479	Theta hat (MLE)					0.00415	Theta star (bias corrected MLE)					0.00646
3480	nu hat (MLE)					78.11	nu star (bias corrected)					50.15
3481	MLE Mean (bias corrected)					0.0203	MLE Sd (bias corrected)					0.0114
3482	95% Percentile of Chisquare (2kstar)					12.99	90% Percentile					0.0356
3483	95% Percentile					0.042	99% Percentile					0.0558
3484	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
3485	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
3486			WH	HW						WH	HW	
3487	95% Approx. Gamma UTL with 90% Coverage		0.0548	0.0566			95% Approx. Gamma UPL			0.0446	0.0454	
3488	95% Gamma USL		0.045	0.0458								
3489												
3490	**Estimates of Gamma Parameters using KM Estimates**											
3491	Mean (KM)					0.0212	SD (KM)					0.00873
3492	Variance (KM)					7.6277E-5	SE of Mean (KM)					0.00339
3493	k hat (KM)					5.885	k star (KM)					3.762
3494	nu hat (KM)					94.16	nu star (KM)					60.19
3495	theta hat (KM)					0.0036	theta star (KM)					0.00563
3496	80% gamma percentile (KM)					0.0294	90% gamma percentile (KM)					0.0358
3497	95% gamma percentile (KM)					0.0418	99% gamma percentile (KM)					0.0544
3498												
3499	**The following statistics are computed using gamma distribution and KM estimates**											
3500	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
3501			WH	HW						WH	HW	
3502	95% Approx. Gamma UTL with 90% Coverage		0.0498	0.0507			95% Approx. Gamma UPL			0.04	0.0403	
3503	95% KM Gamma Percentile		0.0357	0.0358			95% Gamma USL			0.0403	0.0405	
3504												
3505	**Lognormal GOF Test on Detected Observations Only**											
3506	Shapiro Wilk Test Statistic					0.84	**Shapiro Wilk GOF Test**					
3507	5% Shapiro Wilk Critical Value					0.788	Detected Data appear Lognormal at 5% Significance Level					
3508	Lilliefors Test Statistic					0.263	**Lilliefors GOF Test**					
3509	5% Lilliefors Critical Value					0.325	Detected Data appear Lognormal at 5% Significance Level					
3510	**Detected Data appear Lognormal at 5% Significance Level**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3511	A	B	C	D	E	F	G	H	I	J	K	L
3512	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
3513					Mean in Original Scale	0.0203			Mean in Log Scale	-4		
3514					SD in Original Scale	0.0102			SD in Log Scale	0.484		
3515					95% UTL90% Coverage	0.0639			95% BCA UTL90% Coverage	0.039		
3516					95% Bootstrap (%) UTL90% Coverage	0.039			95% UPL (t)	0.0484		
3517					90% Percentile (z)	0.034			95% Percentile (z)	0.0406		
3518					99% Percentile (z)	0.0565			95% USL	0.049		
3519												
3520	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
3521					KM Mean of Logged Data	-3.927			95% KM UTL (Lognormal)90% Coverage	0.0507		
3522					KM SD of Logged Data	0.366			95% KM UPL (Lognormal)	0.0411		
3523					95% KM Percentile Lognormal (z)	0.036			95% KM USL (Lognormal)	0.0415		
3524												
3525	**Background DL/2 Statistics Assuming Lognormal Distribution**											
3526					Mean in Original Scale	0.0196			Mean in Log Scale	-4.08		
3527					SD in Original Scale	0.011			SD in Log Scale	0.603		
3528					95% UTL90% Coverage	0.0802			95% UPL (t)	0.0568		
3529					90% Percentile (z)	0.0366			95% Percentile (z)	0.0456		
3530					99% Percentile (z)	0.0687			95% USL	0.0575		
3531	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
3532												
3533	**Nonparametric Distribution Free Background Statistics**											
3534	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
3535												
3536	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
3537					Order of Statistic, r	8			95% UTL with90% Coverage	0.039		
3538					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL	0.57		
3539					Approximate Sample Size needed to achieve specified CC	29			95% UPL	0.039		
3540					95% USL	0.039			95% KM Chebyshev UPL	0.0616		
3541												
3542	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
3543	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
3544	and consists of observations collected from clean unimpacted locations.											
3545	The use of USL tends to provide a balance between false positives and false negatives provided the data											
3546	represents a background data set and when many onsite observations need to be compared with the BTV.											
3547												
3548	**Mercury (10 - 12)**											
3549												
3550	**General Statistics**											
3551					Total Number of Observations	8			Number of Missing Observations	0		
3552					Number of Distinct Observations	5						
3553					Number of Detects	6			Number of Non-Detects	2		
3554					Number of Distinct Detects	5			Number of Distinct Non-Detects	1		
3555					Minimum Detect	0.012			Minimum Non-Detect	0.012		
3556					Maximum Detect	0.026			Maximum Non-Detect	0.012		
3557					Variance Detected	2.9867E-5			Percent Non-Detects	25%		
3558					Mean Detected	0.0163			SD Detected	0.00547		
3559					Mean of Detected Logged Data	-4.156			SD of Detected Logged Data	0.307		
3560												
3561	**Critical Values for Background Threshold Values (BTVs)**											
3562					Tolerance Factor K (For UTL)	2.582			d2max (for USL)	2.032		
3563												
3564	**Normal GOF Test on Detects Only**											
3565					Shapiro Wilk Test Statistic	0.845			**Shapiro Wilk GOF Test**			
3566					5% Shapiro Wilk Critical Value	0.788			Detected Data appear Normal at 5% Significance Level			
3567					Lilliefors Test Statistic	0.229			**Lilliefors GOF Test**			
3568					5% Lilliefors Critical Value	0.325			Detected Data appear Normal at 5% Significance Level			
3569	**Detected Data appear Normal at 5% Significance Level**											
3570												
3571	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
3572					KM Mean	0.0153			KM SD	0.00471		
3573					95% UTL90% Coverage	0.0274			95% KM UPL (t)	0.0247		
3574					90% KM Percentile (z)	0.0213			95% KM Percentile (z)	0.023		
3575					99% KM Percentile (z)	0.0262			95% KM USL	0.0248		
3576												
3577	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
3578					Mean	0.0138			SD	0.00665		
3579					95% UTL90% Coverage	0.0309			95% UPL (t)	0.0271		
3580					90% Percentile (z)	0.0223			95% Percentile (z)	0.0247		
3581					99% Percentile (z)	0.0292			95% USL	0.0273		
3582	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
3583												
3584	**Gamma GOF Tests on Detected Observations Only**											
3585					A-D Test Statistic	0.431			**Anderson-Darling GOF Test**			
3586					5% A-D Critical Value	0.698			Detected data appear Gamma Distributed at 5% Significance Level			
3587					K-S Test Statistic	0.249			**Kolmogorov-Smirnov GOF**			
3588					5% K-S Critical Value	0.332			Detected data appear Gamma Distributed at 5% Significance Level			
3589	**Detected data appear Gamma Distributed at 5% Significance Level**											
3590												
3591	**Gamma Statistics on Detected Data Only**											
3592					k hat (MLE)	12.2			k star (bias corrected MLE)	6.209		
3593					Theta hat (MLE)	0.00134			Theta star (bias corrected MLE)	0.00263		
3594					nu hat (MLE)	146.3			nu star (bias corrected)	74.5		
3595					MLE Mean (bias corrected)	0.0163						
3596					MLE Sd (bias corrected)	0.00656			95% Percentile of Chisquare (2kstar)	21.59		

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3597											
3598	**Gamma ROS Statistics using Imputed Non-Detects**										
3599	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
3600	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
3601	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
3602	This is especially true when the sample size is small.										
3603	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
3604					Minimum	0.01			Mean	0.0148	
3605					Maximum	0.026			Median	0.0125	
3606					SD	0.00547			CV	0.371	
3607					k hat (MLE)	9.805			k star (bias corrected MLE)	6.211	
3608					Theta hat (MLE)	0.0015			Theta star (bias corrected MLE)	0.00237	
3609					nu hat (MLE)	156.9			nu star (bias corrected)	99.38	
3610					MLE Mean (bias corrected)	0.0148			MLE Sd (bias corrected)	0.00592	
3611					95% Percentile of Chisquare (2kstar)	21.59			90% Percentile	0.0227	
3612					95% Percentile	0.0256			99% Percentile	0.0319	
3613	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**										
3614	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
3615				WH	HW				WH	HW	
3616			95% Approx. Gamma UTL with 90% Coverage	0.0311	0.0315			95% Approx. Gamma UPL	0.0266	0.0267	
3617			95% Gamma USL	0.0268	0.0269						
3618											
3619	**Estimates of Gamma Parameters using KM Estimates**										
3620					Mean (KM)	0.0153			SD (KM)	0.00471	
3621					Variance (KM)	2.2188E-5			SE of Mean (KM)	0.00182	
3622					k hat (KM)	10.48			k star (KM)	6.634	
3623					nu hat (KM)	167.7			nu star (KM)	106.2	
3624					theta hat (KM)	0.00145			theta star (KM)	0.0023	
3625					80% gamma percentile (KM)	0.0199			90% gamma percentile (KM)	0.0232	
3626					95% gamma percentile (KM)	0.0261			99% gamma percentile (KM)	0.0323	
3627											
3628	**The following statistics are computed using gamma distribution and KM estimates**										
3629	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**										
3630				WH	HW				WH	HW	
3631			95% Approx. Gamma UTL with 90% Coverage	0.0296	0.0299			95% Approx. Gamma UPL	0.025	0.025	
3632			95% KM Gamma Percentile	0.0229	0.0228			95% Gamma USL	0.0251	0.0251	
3633											
3634	**Lognormal GOF Test on Detected Observations Only**										
3635					Shapiro Wilk Test Statistic	0.881			**Shapiro Wilk GOF Test**		
3636					5% Shapiro Wilk Critical Value	0.788			Detected Data appear Lognormal at 5% Significance Level		
3637					Lilliefors Test Statistic	0.228			**Lilliefors GOF Test**		
3638					5% Lilliefors Critical Value	0.325			Detected Data appear Lognormal at 5% Significance Level		
3639	**Detected Data appear Lognormal at 5% Significance Level**										
3640											
3641	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**										
3642					Mean in Original Scale	0.0141			Mean in Log Scale	-4.352	
3643					SD in Original Scale	0.00627			SD in Log Scale	0.449	
3644					95% UTL90% Coverage	0.0411			95% BCA UTL90% Coverage	0.026	
3645					95% Bootstrap (%) UTL90% Coverage	0.026			95% UPL (t)	0.0318	
3646					90% Percentile (z)	0.0229			95% Percentile (z)	0.027	
3647					99% Percentile (z)	0.0366			95% USL	0.0321	
3648											
3649	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
3650					KM Mean of Logged Data	-4.223			95% KM UTL (Lognormal)90% Coverage	0.0293	
3651					KM SD of Logged Data	0.269			95% KM UPL (Lognormal)	0.0252	
3652					95% KM Percentile Lognormal (z)	0.0228			95% KM USL (Lognormal)	0.0253	
3653											
3654	**Background DL/2 Statistics Assuming Lognormal Distribution**										
3655					Mean in Original Scale	0.0138			Mean in Log Scale	-4.396	
3656					SD in Original Scale	0.00665			SD in Log Scale	0.515	
3657					95% UTL90% Coverage	0.0465			95% UPL (t)	0.0347	
3658					90% Percentile (z)	0.0238			95% Percentile (z)	0.0287	
3659					99% Percentile (z)	0.0408			95% USL	0.0351	
3660	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**										
3661											
3662	**Nonparametric Distribution Free Background Statistics**										
3663	**Data appear to follow a Discernible Distribution at 5% Significance Level**										
3664											
3665	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**										
3666					Order of Statistic, r	8			95% UTL with90% Coverage	0.026	
3667					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL	0.57	
3668					Approximate Sample Size needed to achieve specified CC	29			95% UPL	0.026	
3669					95% USL	0.026			95% KM Chebyshev UPL	0.037	
3670											
3671	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
3672	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
3673	and consists of observations collected from clean unimpacted locations.										
3674	The use of USL tends to provide a balance between false positives and false negatives provided the data										
3675	represents a background data set and when many onsite observations need to be compared with the BTV.										
3676											
3677	**Nickel (0 - 0.5)**										
3678											
3679	**General Statistics**										
3680					Total Number of Observations	8			Number of Distinct Observations	8	
3681					Minimum	6.4			First Quartile	11.93	
3682					Second Largest	13.6			Median	13.15	

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3683				Maximum	14.2					Third Quartile	13.45
3684				Mean	12.18					SD	2.494
3685				Coefficient of Variation	0.205					Skewness	-2.187
3686				Mean of logged Data	2.474					SD of logged Data	0.259
3687											
3688				**Critical Values for Background Threshold Values (BTVs)**							
3689				Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
3690											
3691				**Normal GOF Test**							
3692				Shapiro Wilk Test Statistic	0.736	**Shapiro Wilk GOF Test**					
3693				5% Shapiro Wilk Critical Value	0.818	Data Not Normal at 5% Significance Level					
3694				Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**					
3695				5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
3696				**Data appear Approximate Normal at 5% Significance Level**							
3697											
3698				**Background Statistics Assuming Normal Distribution**							
3699				95% UTL with 90% Coverage	18.61					90% Percentile (z)	15.37
3700				95% UPL (t)	17.19					95% Percentile (z)	16.28
3701				95% USL	17.24					99% Percentile (z)	17.98
3702											
3703				**Gamma GOF Test**							
3704				A-D Test Statistic	1.158	**Anderson-Darling Gamma GOF Test**					
3705				5% A-D Critical Value	0.716	Data Not Gamma Distributed at 5% Significance Level					
3706				K-S Test Statistic	0.289	**Kolmogorov-Smirnov Gamma GOF Test**					
3707				5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level					
3708				**Detected data follow Appr. Gamma Distribution at 5% Significance Level**							
3709											
3710				**Gamma Statistics**							
3711				k hat (MLE)	20.1					k star (bias corrected MLE)	12.64
3712				Theta hat (MLE)	0.606					Theta star (bias corrected MLE)	0.963
3713				nu hat (MLE)	321.6					nu star (bias corrected)	202.3
3714				MLE Mean (bias corrected)	12.18					MLE Sd (bias corrected)	3.424
3715											
3716				**Background Statistics Assuming Gamma Distribution**							
3717				95% Wilson Hilferty (WH) Approx. Gamma UPL	18.72					90% Percentile	16.72
3718				95% Hawkins Wixley (HW) Approx. Gamma UPL	18.99					95% Percentile	18.3
3719				95% WH Approx. Gamma UTL with 90% Coverage	21.02					99% Percentile	21.52
3720				95% HW Approx. Gamma UTL with 90% Coverage	21.47						
3721				95% WH USL	18.81					95% HW USL	19.09
3722											
3723				**Lognormal GOF Test**							
3724				Shapiro Wilk Test Statistic	0.66	**Shapiro Wilk Lognormal GOF Test**					
3725				5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
3726				Lilliefors Test Statistic	0.313	**Lilliefors Lognormal GOF Test**					
3727				5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level					
3728				**Data Not Lognormal at 5% Significance Level**							
3729											
3730				**Background Statistics assuming Lognormal Distribution**							
3731				95% UTL with 90% Coverage	23.18					90% Percentile (z)	16.55
3732				95% UPL (t)	19.99					95% Percentile (z)	18.18
3733				95% USL	20.1					99% Percentile (z)	21.7
3734											
3735				**Nonparametric Distribution Free Background Statistics**							
3736				**Data appear Approximate Normal at 5% Significance Level**							
3737											
3738				**Nonparametric Upper Limits for Background Threshold Values**							
3739				Order of Statistic, r	8					95% UTL with 90% Coverage	14.2
3740				Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
3741						Approximate Sample Size needed to achieve specified CC					29
3742				95% Percentile Bootstrap UTL with 90% Coverage	14.2	95% BCA Bootstrap UTL with 90% Coverage					14.2
3743				95% UPL	14.2	90% Percentile					13.78
3744				90% Chebyshev UPL	20.11	95% Percentile					13.99
3745				95% Chebyshev UPL	23.7	99% Percentile					14.16
3746				95% USL	14.2						
3747											
3748				Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.							
3749				Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers							
3750				and consists of observations collected from clean unimpacted locations.							
3751				The use of USL tends to provide a balance between false positives and false negatives provided the data							
3752				represents a background data set and when many onsite observations need to be compared with the BTV.							
3753											
3754	**Nickel (0.5 - 2)**										
3755											
3756	**General Statistics**										
3757				Total Number of Observations	8					Number of Distinct Observations	7
3758				Minimum	5.8					First Quartile	10.45
3759				Second Largest	13					Median	12
3760				Maximum	14.2					Third Quartile	12.7
3761				Mean	11.3					SD	2.56
3762				Coefficient of Variation	0.227					Skewness	-1.541
3763				Mean of logged Data	2.395					SD of logged Data	0.278
3764											
3765				**Critical Values for Background Threshold Values (BTVs)**							
3766				Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032
3767											
3768				**Normal GOF Test**							

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
3769	Shapiro Wilk Test Statistic					0.867	**Shapiro Wilk GOF Test**					
3770	5% Shapiro Wilk Critical Value					0.818	Data appear Normal at 5% Significance Level					
3771	Lilliefors Test Statistic					0.233	**Lilliefors GOF Test**					
3772	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
3773	**Data appear Normal at 5% Significance Level**											
3774												
3775	**Background Statistics Assuming Normal Distribution**											
3776	95% UTL with 90% Coverage					17.91	90% Percentile (z)					14.58
3777	95% UPL (t)					16.44	95% Percentile (z)					15.51
3778	95% USL					16.5	99% Percentile (z)					17.25
3779												
3780	**Gamma GOF Test**											
3781	A-D Test Statistic					0.724	**Anderson-Darling Gamma GOF Test**					
3782	5% A-D Critical Value					0.716	Data Not Gamma Distributed at 5% Significance Level					
3783	K-S Test Statistic					0.258	**Kolmogorov-Smirnov Gamma GOF Test**					
3784	5% K-S Critical Value					0.294	Detected data appear Gamma Distributed at 5% Significance Level					
3785	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
3786												
3787	**Gamma Statistics**											
3788	k hat (MLE)					17.16	k star (bias corrected MLE)					10.81
3789	Theta hat (MLE)					0.658	Theta star (bias corrected MLE)					1.045
3790	nu hat (MLE)					274.6	nu star (bias corrected)					172.9
3791	MLE Mean (bias corrected)					11.3	MLE Sd (bias corrected)					3.437
3792												
3793	**Background Statistics Assuming Gamma Distribution**											
3794	95% Wilson Hilferty (WH) Approx. Gamma UPL					17.93	90% Percentile					15.87
3795	95% Hawkins Wixley (HW) Approx. Gamma UPL					18.2	95% Percentile					17.48
3796	95% WH Approx. Gamma UTL with 90% Coverage					20.3	99% Percentile					20.79
3797	95% HW Approx. Gamma UTL with 90% Coverage					20.76						
3798	95% WH USL					18.02	95% HW USL					18.3
3799												
3800	**Lognormal GOF Test**											
3801	Shapiro Wilk Test Statistic					0.772	**Shapiro Wilk Lognormal GOF Test**					
3802	5% Shapiro Wilk Critical Value					0.818	Data Not Lognormal at 5% Significance Level					
3803	Lilliefors Test Statistic					0.285	**Lilliefors Lognormal GOF Test**					
3804	5% Lilliefors Critical Value					0.283	Data Not Lognormal at 5% Significance Level					
3805	**Data Not Lognormal at 5% Significance Level**											
3806												
3807	**Background Statistics assuming Lognormal Distribution**											
3808	95% UTL with 90% Coverage					22.52	90% Percentile (z)					15.68
3809	95% UPL (t)					19.2	95% Percentile (z)					17.35
3810	95% USL					19.32	99% Percentile (z)					20.97
3811												
3812	**Nonparametric Distribution Free Background Statistics**											
3813	**Data appear Normal at 5% Significance Level**											
3814												
3815	**Nonparametric Upper Limits for Background Threshold Values**											
3816	Order of Statistic, r					8	95% UTL with 90% Coverage					14.2
3817	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
3818							Approximate Sample Size needed to achieve specified CC					29
3819	95% Percentile Bootstrap UTL with 90% Coverage					14.2	95% BCA Bootstrap UTL with 90% Coverage					14.2
3820	95% UPL					14.2	90% Percentile					13.36
3821	90% Chebyshev UPL					19.44	95% Percentile					13.78
3822	95% Chebyshev UPL					23.13	99% Percentile					14.12
3823	95% USL					14.2						
3824												
3825	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
3826	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
3827	and consists of observations collected from clean unimpacted locations.											
3828	The use of USL tends to provide a balance between false positives and false negatives provided the data											
3829	represents a background data set and when many onsite observations need to be compared with the BTV.											
3830												
3831	**Nickel (10 - 12)**											
3832												
3833	**General Statistics**											
3834	Total Number of Observations					8	Number of Distinct Observations					8
3835	Minimum					5.2	First Quartile					7.05
3836	Second Largest					11.1	Median					8.7
3837	Maximum					11.6	Third Quartile					10.88
3838	Mean					8.763	SD					2.292
3839	Coefficient of Variation					0.262	Skewness					-0.193
3840	Mean of logged Data					2.138	SD of logged Data					0.279
3841												
3842	**Critical Values for Background Threshold Values (BTVs)**											
3843	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
3844												
3845	**Normal GOF Test**											
3846	Shapiro Wilk Test Statistic					0.94	**Shapiro Wilk GOF Test**					
3847	5% Shapiro Wilk Critical Value					0.818	Data appear Normal at 5% Significance Level					
3848	Lilliefors Test Statistic					0.188	**Lilliefors GOF Test**					
3849	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
3850	**Data appear Normal at 5% Significance Level**											
3851												
3852	**Background Statistics Assuming Normal Distribution**											
3853	95% UTL with 90% Coverage					14.68	90% Percentile (z)					11.7
3854	95% UPL (t)					13.37	95% Percentile (z)					12.53

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

3855				95% USL	13.42				99% Percentile (z)		14.09
3856												
3857				**Gamma GOF Test**								
3858				A-D Test Statistic	0.293	**Anderson-Darling Gamma GOF Test**						
3859				5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level						
3860				K-S Test Statistic	0.2	**Kolmogorov-Smirnov Gamma GOF Test**						
3861				5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level						
3862				**Detected data appear Gamma Distributed at 5% Significance Level**								
3863												
3864				**Gamma Statistics**								
3865				k hat (MLE)	15.51	k star (bias corrected MLE)	9.779					
3866				Theta hat (MLE)	0.565	Theta star (bias corrected MLE)	0.896					
3867				nu hat (MLE)	248.2	nu star (bias corrected)	156.5					
3868				MLE Mean (bias corrected)	8.763	MLE Sd (bias corrected)	2.802					
3869												
3870				**Background Statistics Assuming Gamma Distribution**								
3871				95% Wilson Hilferty (WH) Approx. Gamma UPL	14.21	90% Percentile	12.49					
3872				95% Hawkins Wixley (HW) Approx. Gamma UPL	14.35	95% Percentile	13.82					
3873				95% WH Approx. Gamma UTL with 90% Coverage	16.17	99% Percentile	16.56					
3874				95% HW Approx. Gamma UTL with 90% Coverage	16.44							
3875				95% WH USL	14.28	95% HW USL	14.43					
3876												
3877				**Lognormal GOF Test**								
3878				Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk Lognormal GOF Test**						
3879				5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level						
3880				Lilliefors Test Statistic	0.182	**Lilliefors Lognormal GOF Test**						
3881				5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level						
3882				**Data appear Lognormal at 5% Significance Level**								
3883												
3884				**Background Statistics assuming Lognormal Distribution**								
3885				95% UTL with 90% Coverage	17.44	90% Percentile (z)	12.13					
3886				95% UPL (t)	14.87	95% Percentile (z)	13.43					
3887				95% USL	14.96	99% Percentile (z)	16.24					
3888												
3889				**Nonparametric Distribution Free Background Statistics**								
3890				**Data appear Normal at 5% Significance Level**								
3891												
3892				**Nonparametric Upper Limits for Background Threshold Values**								
3893				Order of Statistic, r	8	95% UTL with 90% Coverage	11.6					
3894				Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL	0.57					
3895						Approximate Sample Size needed to achieve specified CC	29					
3896				95% Percentile Bootstrap UTL with 90% Coverage	11.6	95% BCA Bootstrap UTL with 90% Coverage	11.6					
3897				95% UPL	11.6	90% Percentile	11.25					
3898				90% Chebyshev UPL	16.06	95% Percentile	11.43					
3899				95% Chebyshev UPL	19.36	99% Percentile	11.57					
3900				95% USL	11.6							
3901												
3902				Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.								
3903				Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers								
3904				and consists of observations collected from clean unimpacted locations.								
3905				The use of USL tends to provide a balance between false positives and false negatives provided the data								
3906				represents a background data set and when many onsite observations need to be compared with the BTV.								
3907												
3908	**Potassium (0 - 0.5)**											
3909												
3910	**General Statistics**											
3911				Total Number of Observations	8	Number of Distinct Observations	8					
3912				Minimum	519	First Quartile	1003					
3913				Second Largest	1310	Median	1120					
3914				Maximum	1510	Third Quartile	1250					
3915				Mean	1098	SD	292.4					
3916				Coefficient of Variation	0.266	Skewness	-0.877					
3917				Mean of logged Data	6.962	SD of logged Data	0.321					
3918												
3919				**Critical Values for Background Threshold Values (BTVs)**								
3920				Tolerance Factor K (For UTL)	2.582	d2max (for USL)	2.032					
3921												
3922				**Normal GOF Test**								
3923				Shapiro Wilk Test Statistic	0.949	**Shapiro Wilk GOF Test**						
3924				5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level						
3925				Lilliefors Test Statistic	0.185	**Lilliefors GOF Test**						
3926				5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level						
3927				**Data appear Normal at 5% Significance Level**								
3928												
3929				**Background Statistics Assuming Normal Distribution**								
3930				95% UTL with 90% Coverage	1853	90% Percentile (z)	1473					
3931				95% UPL (t)	1685	95% Percentile (z)	1579					
3932				95% USL	1692	99% Percentile (z)	1778					
3933												
3934				**Gamma GOF Test**								
3935				A-D Test Statistic	0.451	**Anderson-Darling Gamma GOF Test**						
3936				5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level						
3937				K-S Test Statistic	0.219	**Kolmogorov-Smirnov Gamma GOF Test**						
3938				5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level						
3939				**Detected data appear Gamma Distributed at 5% Significance Level**								
3940												

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
3941	**Gamma Statistics**											
3942					k hat (MLE)	12.83			k star (bias corrected MLE)			8.104
3943					Theta hat (MLE)	85.55			Theta star (bias corrected MLE)			135.5
3944					nu hat (MLE)	205.3			nu star (bias corrected)			129.7
3945					MLE Mean (bias corrected)	1098			MLE Sd (bias corrected)			385.6
3946												
3947	**Background Statistics Assuming Gamma Distribution**											
3948				95% Wilson Hilferty (WH) Approx. Gamma UPL		1856			90% Percentile			1612
3949				95% Hawkins Wixley (HW) Approx. Gamma UPL		1889			95% Percentile			1799
3950				95% WH Approx. Gamma UTL with 90% Coverage		2135			99% Percentile			2187
3951				95% HW Approx. Gamma UTL with 90% Coverage		2192						
3952					95% WH USL	1866			95% HW USL			1900
3953												
3954	**Lognormal GOF Test**											
3955					Shapiro Wilk Test Statistic	0.849		**Shapiro Wilk Lognormal GOF Test**				
3956					5% Shapiro Wilk Critical Value	0.818		Data appear Lognormal at 5% Significance Level				
3957					Lilliefors Test Statistic	0.251		**Lilliefors Lognormal GOF Test**				
3958					5% Lilliefors Critical Value	0.283		Data appear Lognormal at 5% Significance Level				
3959	**Data appear Lognormal at 5% Significance Level**											
3960												
3961	**Background Statistics assuming Lognormal Distribution**											
3962					95% UTL with 90% Coverage	2420			90% Percentile (z)			1593
3963					95% UPL (t)	2013			95% Percentile (z)			1791
3964					95% USL	2028			99% Percentile (z)			2229
3965												
3966	**Nonparametric Distribution Free Background Statistics**											
3967	**Data appear Normal at 5% Significance Level**											
3968												
3969	**Nonparametric Upper Limits for Background Threshold Values**											
3970					Order of Statistic, r	8			95% UTL with 90% Coverage			1510
3971					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL			0.57
3972									Approximate Sample Size needed to achieve specified CC			29
3973				95% Percentile Bootstrap UTL with 90% Coverage		1510			95% BCA Bootstrap UTL with 90% Coverage			1510
3974					95% UPL	1510			90% Percentile			1370
3975					90% Chebyshev UPL	2028			95% Percentile			1440
3976					95% Chebyshev UPL	2450			99% Percentile			1496
3977					95% USL	1510						
3978												
3979	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
3980	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
3981	and consists of observations collected from clean unimpacted locations.											
3982	The use of USL tends to provide a balance between false positives and false negatives provided the data											
3983	represents a background data set and when many onsite observations need to be compared with the BTV.											
3984												
3985	**Potassium (0.5 - 2)**											
3986												
3987	**General Statistics**											
3988					Total Number of Observations	8			Number of Distinct Observations			8
3989					Minimum	551			First Quartile			725.3
3990					Second Largest	1220			Median			953.5
3991					Maximum	1340			Third Quartile			1213
3992					Mean	945.6			SD			301.5
3993					Coefficient of Variation	0.319			Skewness			-0.173
3994					Mean of logged Data	6.802			SD of logged Data			0.346
3995												
3996	**Critical Values for Background Threshold Values (BTVs)**											
3997					Tolerance Factor K (For UTL)	2.582			d2max (for USL)			2.032
3998												
3999	**Normal GOF Test**											
4000					Shapiro Wilk Test Statistic	0.918		**Shapiro Wilk GOF Test**				
4001					5% Shapiro Wilk Critical Value	0.818		Data appear Normal at 5% Significance Level				
4002					Lilliefors Test Statistic	0.185		**Lilliefors GOF Test**				
4003					5% Lilliefors Critical Value	0.283		Data appear Normal at 5% Significance Level				
4004	**Data appear Normal at 5% Significance Level**											
4005												
4006	**Background Statistics Assuming Normal Distribution**											
4007					95% UTL with 90% Coverage	1724			90% Percentile (z)			1332
4008					95% UPL (t)	1552			95% Percentile (z)			1442
4009					95% USL	1558			99% Percentile (z)			1647
4010												
4011	**Gamma GOF Test**											
4012					A-D Test Statistic	0.396		**Anderson-Darling Gamma GOF Test**				
4013					5% A-D Critical Value	0.715		Detected data appear Gamma Distributed at 5% Significance Level				
4014					K-S Test Statistic	0.198		**Kolmogorov-Smirnov Gamma GOF Test**				
4015					5% K-S Critical Value	0.294		Detected data appear Gamma Distributed at 5% Significance Level				
4016	**Detected data appear Gamma Distributed at 5% Significance Level**											
4017												
4018	**Gamma Statistics**											
4019					k hat (MLE)	10.24			k star (bias corrected MLE)			6.486
4020					Theta hat (MLE)	92.3			Theta star (bias corrected MLE)			145.8
4021					nu hat (MLE)	163.9			nu star (bias corrected)			103.8
4022					MLE Mean (bias corrected)	945.6			MLE Sd (bias corrected)			371.3
4023												
4024	**Background Statistics Assuming Gamma Distribution**											
4025				95% Wilson Hilferty (WH) Approx. Gamma UPL		1689			90% Percentile			1442
4026				95% Hawkins Wixley (HW) Approx. Gamma UPL		1713			95% Percentile			1627

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4027	95% WH Approx. Gamma UTL with 90% Coverage					1969	99% Percentile					2015
4028	95% HW Approx. Gamma UTL with 90% Coverage					2017						
4029	95% WH USL					1699	95% HW USL					1724
4030												
4031	**Lognormal GOF Test**											
4032	Shapiro Wilk Test Statistic					0.891	**Shapiro Wilk Lognormal GOF Test**					
4033	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
4034	Lilliefors Test Statistic					0.179	**Lilliefors Lognormal GOF Test**					
4035	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					
4036	**Data appear Lognormal at 5% Significance Level**											
4037												
4038	**Background Statistics assuming Lognormal Distribution**											
4039	95% UTL with 90% Coverage					2201	90% Percentile (z)					1403
4040	95% UPL (t)					1805	95% Percentile (z)					1591
4041	95% USL					1819	99% Percentile (z)					2014
4042												
4043	**Nonparametric Distribution Free Background Statistics**											
4044	**Data appear Normal at 5% Significance Level**											
4045												
4046	**Nonparametric Upper Limits for Background Threshold Values**											
4047	Order of Statistic, r					8	95% UTL with 90% Coverage					1340
4048	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
4049							Approximate Sample Size needed to achieve specified CC					29
4050	95% Percentile Bootstrap UTL with 90% Coverage					1340	95% BCA Bootstrap UTL with 90% Coverage					1340
4051	95% UPL					1340	90% Percentile					1256
4052	90% Chebyshev UPL					1905	95% Percentile					1298
4053	95% Chebyshev UPL					2340	99% Percentile					1332
4054	95% USL					1340						
4055												
4056	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
4057	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
4058	and consists of observations collected from clean unimpacted locations.											
4059	The use of USL tends to provide a balance between false positives and false negatives provided the data											
4060	represents a background data set and when many onsite observations need to be compared with the BTV.											
4061												
4062	**Potassium (10 - 12)**											
4063												
4064	**General Statistics**											
4065	Total Number of Observations					8	Number of Distinct Observations					8
4066	Minimum					427	First Quartile					515.5
4067	Second Largest					733	Median					681.5
4068	Maximum					788	Third Quartile					715.8
4069	Mean					628.1	SD					132.5
4070	Coefficient of Variation					0.211	Skewness					-0.537
4071	Mean of logged Data					6.421	SD of logged Data					0.226
4072												
4073	**Critical Values for Background Threshold Values (BTVs)**											
4074	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
4075												
4076	**Normal GOF Test**											
4077	Shapiro Wilk Test Statistic					0.902	**Shapiro Wilk GOF Test**					
4078	5% Shapiro Wilk Critical Value					0.818	Data appear Normal at 5% Significance Level					
4079	Lilliefors Test Statistic					0.249	**Lilliefors GOF Test**					
4080	5% Lilliefors Critical Value					0.283	Data appear Normal at 5% Significance Level					
4081	**Data appear Normal at 5% Significance Level**											
4082												
4083	**Background Statistics Assuming Normal Distribution**											
4084	95% UTL with 90% Coverage					970.3	90% Percentile (z)					798
4085	95% UPL (t)					894.4	95% Percentile (z)					846.1
4086	95% USL					897.4	99% Percentile (z)					936.4
4087												
4088	**Gamma GOF Test**											
4089	A-D Test Statistic					0.522	**Anderson-Darling Gamma GOF Test**					
4090	5% A-D Critical Value					0.716	Detected data appear Gamma Distributed at 5% Significance Level					
4091	K-S Test Statistic					0.275	**Kolmogorov-Smirnov Gamma GOF Test**					
4092	5% K-S Critical Value					0.294	Detected data appear Gamma Distributed at 5% Significance Level					
4093	**Detected data appear Gamma Distributed at 5% Significance Level**											
4094												
4095	**Gamma Statistics**											
4096	k hat (MLE)					23.61	k star (bias corrected MLE)					14.84
4097	Theta hat (MLE)					26.6	Theta star (bias corrected MLE)					42.33
4098	nu hat (MLE)					377.8	nu star (bias corrected)					237.4
4099	MLE Mean (bias corrected)					628.1	MLE Sd (bias corrected)					163.1
4100												
4101	**Background Statistics Assuming Gamma Distribution**											
4102	95% Wilson Hilferty (WH) Approx. Gamma UPL					937.4	90% Percentile					844
4103	95% Hawkins Wixley (HW) Approx. Gamma UPL					944.3	95% Percentile					918.2
4104	95% WH Approx. Gamma UTL with 90% Coverage					1045	99% Percentile					1068
4105	95% HW Approx. Gamma UTL with 90% Coverage					1057						
4106	95% WH USL					941.4	95% HW USL					948.5
4107												
4108	**Lognormal GOF Test**											
4109	Shapiro Wilk Test Statistic					0.882	**Shapiro Wilk Lognormal GOF Test**					
4110	5% Shapiro Wilk Critical Value					0.818	Data appear Lognormal at 5% Significance Level					
4111	Lilliefors Test Statistic					0.273	**Lilliefors Lognormal GOF Test**					
4112	5% Lilliefors Critical Value					0.283	Data appear Lognormal at 5% Significance Level					

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4113	**Data appear Lognormal at 5% Significance Level**										
4114											
4115	**Background Statistics assuming Lognormal Distribution**										
4116	95% UTL with 90% Coverage	1102				90% Percentile (z)	821.3				
4117	95% UPL (t)	968				95% Percentile (z)	891.5				
4118	95% USL	972.8				99% Percentile (z)	1040				
4119											
4120	**Nonparametric Distribution Free Background Statistics**										
4121	**Data appear Normal at 5% Significance Level**										
4122											
4123	**Nonparametric Upper Limits for Background Threshold Values**										
4124	Order of Statistic, r	8				95% UTL with 90% Coverage	788				
4125	Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL	0.57				
4126						Approximate Sample Size needed to achieve specified CC	29				
4127	95% Percentile Bootstrap UTL with 90% Coverage	788				95% BCA Bootstrap UTL with 90% Coverage	788				
4128	95% UPL	788				90% Percentile	749.5				
4129	90% Chebyshev UPL	1050				95% Percentile	768.8				
4130	95% Chebyshev UPL	1241				99% Percentile	784.2				
4131	95% USL	788									
4132											
4133	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
4134	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
4135	and consists of observations collected from clean unimpacted locations.										
4136	The use of USL tends to provide a balance between false positives and false negatives provided the data										
4137	represents a background data set and when many onsite observations need to be compared with the BTV.										
4138											
4139	**Selenium (0 - 0.5)**										
4140											
4141	**General Statistics**										
4142	Total Number of Observations	8				Number of Missing Observations	0				
4143	Number of Distinct Observations	8									
4144	Number of Detects	5				Number of Non-Detects	3				
4145	Number of Distinct Detects	5				Number of Distinct Non-Detects	3				
4146	Minimum Detect	0.4				Minimum Non-Detect	0.34				
4147	Maximum Detect	0.93				Maximum Non-Detect	0.46				
4148	Variance Detected	0.0565				Percent Non-Detects	37.5%				
4149	Mean Detected	0.686				SD Detected	0.238				
4150	Mean of Detected Logged Data	-0.43				SD of Detected Logged Data	0.373				
4151											
4152	**Critical Values for Background Threshold Values (BTVs)**										
4153	Tolerance Factor K (For UTL)	2.582				d2max (for USL)	2.032				
4154											
4155	**Normal GOF Test on Detects Only**										
4156	Shapiro Wilk Test Statistic	0.9				**Shapiro Wilk GOF Test**					
4157	5% Shapiro Wilk Critical Value	0.762				Detected Data appear Normal at 5% Significance Level					
4158	Lilliefors Test Statistic	0.216				**Lilliefors GOF Test**					
4159	5% Lilliefors Critical Value	0.343				Detected Data appear Normal at 5% Significance Level					
4160	**Detected Data appear Normal at 5% Significance Level**										
4161											
4162	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**										
4163	KM Mean	0.559				KM SD	0.235				
4164	95% UTL90% Coverage	1.166				95% KM UPL (t)	1.032				
4165	90% KM Percentile (z)	0.86				95% KM Percentile (z)	0.946				
4166	99% KM Percentile (z)	1.106				95% KM USL	1.037				
4167											
4168	**DL/2 Substitution Background Statistics Assuming Normal Distribution**										
4169	Mean	0.501				SD	0.313				
4170	95% UTL90% Coverage	1.309				95% UPL (t)	1.13				
4171	90% Percentile (z)	0.902				95% Percentile (z)	1.016				
4172	99% Percentile (z)	1.229				95% USL	1.137				
4173	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**										
4174											
4175	**Gamma GOF Tests on Detected Observations Only**										
4176	A-D Test Statistic	0.364				**Anderson-Darling GOF Test**					
4177	5% A-D Critical Value	0.679				Detected data appear Gamma Distributed at 5% Significance Level					
4178	K-S Test Statistic	0.238				**Kolmogorov-Smirnov GOF**					
4179	5% K-S Critical Value	0.358				Detected data appear Gamma Distributed at 5% Significance Level					
4180	**Detected data appear Gamma Distributed at 5% Significance Level**										
4181											
4182	**Gamma Statistics on Detected Data Only**										
4183	k hat (MLE)	9.574				k star (bias corrected MLE)	3.963				
4184	Theta hat (MLE)	0.0717				Theta star (bias corrected MLE)	0.173				
4185	nu hat (MLE)	95.74				nu star (bias corrected)	39.63				
4186	MLE Mean (bias corrected)	0.686									
4187	MLE Sd (bias corrected)	0.345				95% Percentile of Chisquare (2kstar)	15.4				
4188											
4189	**Gamma ROS Statistics using Imputed Non-Detects**										
4190	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
4191	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
4192	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
4193	This is especially true when the sample size is small.										
4194	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
4195	Minimum	0.165				Mean	0.501				
4196	Maximum	0.93				Median	0.445				
4197	SD	0.313				CV	0.625				
4198	k hat (MLE)	2.631				k star (bias corrected MLE)	1.728				

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
4199				Theta hat (MLE)		0.191			Theta star (bias corrected MLE)			0.29
4200				nu hat (MLE)		42.09			nu star (bias corrected)			27.64
4201				MLE Mean (bias corrected)		0.501			MLE Sd (bias corrected)			0.381
4202				95% Percentile of Chisquare (2kstar)		8.59			90% Percentile			1.009
4203				95% Percentile		1.246			99% Percentile			1.776
4204	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
4205	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
4206					WH	HW					WH	HW
4207	95% Approx. Gamma UTL with 90% Coverage				1.782	1.908			95% Approx. Gamma UPL		1.376	1.435
4208	95% Gamma USL				1.39	1.451						
4209												
4210	**Estimates of Gamma Parameters using KM Estimates**											
4211				Mean (KM)		0.559			SD (KM)			0.235
4212				Variance (KM)		0.0554			SE of Mean (KM)			0.0931
4213				k hat (KM)		5.637			k star (KM)			3.606
4214				nu hat (KM)		90.19			nu star (KM)			57.7
4215				theta hat (KM)		0.0991			theta star (KM)			0.155
4216				80% gamma percentile (KM)		0.78			90% gamma percentile (KM)			0.953
4217				95% gamma percentile (KM)		1.114			99% gamma percentile (KM)			1.458
4218												
4219	**The following statistics are computed using gamma distribution and KM estimates**											
4220	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
4221					WH	HW					WH	HW
4222	95% Approx. Gamma UTL with 90% Coverage				1.388	1.424			95% Approx. Gamma UPL		1.1	1.113
4223	95% KM Gamma Percentile				0.975	0.981			95% Gamma USL		1.108	1.121
4224												
4225	**Lognormal GOF Test on Detected Observations Only**											
4226	Shapiro Wilk Test Statistic					0.898	**Shapiro Wilk GOF Test**					
4227	5% Shapiro Wilk Critical Value					0.762	Detected Data appear Lognormal at 5% Significance Level					
4228	Lilliefors Test Statistic					0.208	**Lilliefors GOF Test**					
4229	5% Lilliefors Critical Value					0.343	Detected Data appear Lognormal at 5% Significance Level					
4230	**Detected Data appear Lognormal at 5% Significance Level**											
4231												
4232	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
4233	Mean in Original Scale					0.53	Mean in Log Scale					-0.762
4234	SD in Original Scale					0.281	SD in Log Scale					0.541
4235	95% UTL90% Coverage					1.886	95% BCA UTL90% Coverage					0.93
4236	95% Bootstrap (%) UTL90% Coverage					0.93	95% UPL (t)					1.384
4237	90% Percentile (z)					0.934	95% Percentile (z)					1.136
4238	99% Percentile (z)					1.642	95% USL					1.4
4239												
4240	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
4241	KM Mean of Logged Data					-0.667	95% KM UTL (Lognormal)90% Coverage					1.461
4242	KM SD of Logged Data					0.405	95% KM UPL (Lognormal)					1.158
4243	95% KM Percentile Lognormal (z)					0.999	95% KM USL (Lognormal)					1.169
4244												
4245	**Background DL/2 Statistics Assuming Lognormal Distribution**											
4246	Mean in Original Scale					0.501	Mean in Log Scale					-0.892
4247	SD in Original Scale					0.313	SD in Log Scale					0.703
4248	95% UTL90% Coverage					2.516	95% UPL (t)					1.683
4249	90% Percentile (z)					1.009	95% Percentile (z)					1.302
4250	99% Percentile (z)					2.102	95% USL					1.709
4251	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
4252												
4253	**Nonparametric Distribution Free Background Statistics**											
4254	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
4255												
4256	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
4257	Order of Statistic, r					8	95% UTL with90% Coverage					0.93
4258	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
4259	Approximate Sample Size needed to achieve specified CC					29	95% UPL					0.93
4260	95% USL					0.93	95% KM Chebyshev UPL					1.647
4261												
4262	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
4263	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
4264	and consists of observations collected from clean unimpacted locations.											
4265	The use of USL tends to provide a balance between false positives and false negatives provided the data											
4266	represents a background data set and when many onsite observations need to be compared with the BTV.											
4267												
4268	**Selenium (0.5 - 2)**											
4269												
4270	**General Statistics**											
4271	Total Number of Observations					8	Number of Missing Observations					0
4272	Number of Distinct Observations					6						
4273	Number of Detects					3	Number of Non-Detects					5
4274	Number of Distinct Detects					3	Number of Distinct Non-Detects					3
4275	Minimum Detect					0.39	Minimum Non-Detect					0.34
4276	Maximum Detect					1.1	Maximum Non-Detect					0.48
4277	Variance Detected					0.126	Percent Non-Detects					62.5%
4278	Mean Detected					0.743	SD Detected					0.355
4279	Mean of Detected Logged Data					-0.382	SD of Detected Logged Data					0.523
4280												
4281	**Warning: Data set has only 3 Detected Values.**											
4282	**This is not enough to compute meaningful or reliable statistics and estimates.**											
4283												
4284												

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
4285	**Critical Values for Background Threshold Values (BTVs)**											
4286	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
4287												
4288	**Normal GOF Test on Detects Only**											
4289	Shapiro Wilk Test Statistic					1	**Shapiro Wilk GOF Test**					
4290	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Normal at 5% Significance Level					
4291	Lilliefors Test Statistic					0.176	**Lilliefors GOF Test**					
4292	5% Lilliefors Critical Value					0.425	Detected Data appear Normal at 5% Significance Level					
4293	**Detected Data appear Normal at 5% Significance Level**											
4294												
4295	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
4296	KM Mean					0.493	KM SD					0.263
4297	95% UTL90% Coverage					1.172	95% KM UPL (t)					1.022
4298	90% KM Percentile (z)					0.83	95% KM Percentile (z)					0.926
4299	99% KM Percentile (z)					1.105	95% KM USL					1.027
4300												
4301	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
4302	Mean					0.395	SD					0.346
4303	95% UTL90% Coverage					1.288	95% UPL (t)					1.09
4304	90% Percentile (z)					0.838	95% Percentile (z)					0.964
4305	99% Percentile (z)					1.2	95% USL					1.098
4306	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
4307												
4308	**Gamma GOF Tests on Detected Observations Only**											
4309	**Not Enough Data to Perform GOF Test**											
4310												
4311	**Gamma Statistics on Detected Data Only**											
4312	k hat (MLE)					5.985	k star (bias corrected MLE)					N/A
4313	Theta hat (MLE)					0.124	Theta star (bias corrected MLE)					N/A
4314	nu hat (MLE)					35.91	nu star (bias corrected)					N/A
4315	MLE Mean (bias corrected)					N/A						
4316	MLE Sd (bias corrected)					N/A	95% Percentile of Chisquare (2kstar)					N/A
4317												
4318	**Gamma ROS Statistics using Imputed Non-Detects**											
4319	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
4320	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
4321	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
4322	This is especially true when the sample size is small.											
4323	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
4324	Minimum					0.01	Mean					0.285
4325	Maximum					1.1	Median					0.01
4326	SD					0.424	CV					1.489
4327	k hat (MLE)					0.376	k star (bias corrected MLE)					0.318
4328	Theta hat (MLE)					0.757	Theta star (bias corrected MLE)					0.895
4329	nu hat (MLE)					6.02	nu star (bias corrected)					5.096
4330	MLE Mean (bias corrected)					0.285	MLE Sd (bias corrected)					0.505
4331	95% Percentile of Chisquare (2kstar)					2.858	90% Percentile					0.834
4332	95% Percentile					1.279	99% Percentile					2.425
4333	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
4334	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
4335			WH		HW					WH		HW
4336	95% Approx. Gamma UTL with 90% Coverage		2.699		3.375		95% Approx. Gamma UPL			1.674		1.904
4337	95% Gamma USL		1.708		1.95							
4338												
4339	**Estimates of Gamma Parameters using KM Estimates**											
4340	Mean (KM)					0.493	SD (KM)					0.263
4341	Variance (KM)					0.0693	SE of Mean (KM)					0.114
4342	k hat (KM)					3.499	k star (KM)					2.27
4343	nu hat (KM)					55.99	nu star (KM)					36.32
4344	theta hat (KM)					0.141	theta star (KM)					0.217
4345	80% gamma percentile (KM)					0.726	90% gamma percentile (KM)					0.93
4346	95% gamma percentile (KM)					1.123	99% gamma percentile (KM)					1.547
4347												
4348	**The following statistics are computed using gamma distribution and KM estimates**											
4349	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
4350			WH		HW					WH		HW
4351	95% Approx. Gamma UTL with 90% Coverage		1.326		1.348		95% Approx. Gamma UPL			1.03		1.032
4352	95% KM Gamma Percentile		0.903		0.9		95% Gamma USL			1.038		1.041
4353												
4354	**Lognormal GOF Test on Detected Observations Only**											
4355	Shapiro Wilk Test Statistic					0.982	**Shapiro Wilk GOF Test**					
4356	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
4357	Lilliefors Test Statistic					0.228	**Lilliefors GOF Test**					
4358	5% Lilliefors Critical Value					0.425	Detected Data appear Lognormal at 5% Significance Level					
4359	**Detected Data appear Lognormal at 5% Significance Level**											
4360												
4361	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
4362	Mean in Original Scale					0.368	Mean in Log Scale					-1.389
4363	SD in Original Scale					0.366	SD in Log Scale					0.918
4364	95% UTL90% Coverage					2.667	95% BCA UTL90% Coverage					1.1
4365	95% Bootstrap (%) UTL90% Coverage					1.1	95% UPL (t)					1.577
4366	90% Percentile (z)					0.808	95% Percentile (z)					1.128
4367	99% Percentile (z)					2.109	95% USL					1.609
4368												
4369	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
4370	KM Mean of Logged Data					-0.814	95% KM UTL (Lognormal)90% Coverage					1.328

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4371	KM SD of Logged Data				0.425	95% KM UPL (Lognormal)						1.041
4372	95% KM Percentile Lognormal (z)				0.891	95% KM USL (Lognormal)						1.051
4373												
4374	**Background DL/2 Statistics Assuming Lognormal Distribution**											
4375	Mean in Original Scale				0.395	Mean in Log Scale						-1.201
4376	SD in Original Scale				0.346	SD in Log Scale						0.741
4377	95% UTL90% Coverage				2.042	95% UPL (t)						1.336
4378	90% Percentile (z)				0.779	95% Percentile (z)						1.019
4379	99% Percentile (z)				1.689	95% USL						1.358
4380	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
4381												
4382	**Nonparametric Distribution Free Background Statistics**											
4383	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
4384												
4385	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
4386	Order of Statistic, r				8	95% UTL with90% Coverage						1.1
4387	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL						0.57
4388	Approximate Sample Size needed to achieve specified CC				29	95% UPL						1.1
4389	95% USL				1.1	95% KM Chebyshev UPL						1.71
4390												
4391	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
4392	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
4393	and consists of observations collected from clean unimpacted locations.											
4394	The use of USL tends to provide a balance between false positives and false negatives provided the data											
4395	represents a background data set and when many onsite observations need to be compared with the BTV.											
4396												
4397	**Selenium (10 - 12)**											
4398												
4399	**General Statistics**											
4400	Total Number of Observations				8	Number of Missing Observations						0
4401	Number of Distinct Observations				4							
4402	Number of Detects				0	Number of Non-Detects						8
4403	Number of Distinct Detects				0	Number of Distinct Non-Detects						4
4404	Minimum Detect				N/A	Minimum Non-Detect						0.3
4405	Maximum Detect				N/A	Maximum Non-Detect						0.33
4406	Variance Detected				N/A	Percent Non-Detects						100%
4407	Mean Detected				N/A	SD Detected						N/A
4408	Mean of Detected Logged Data				N/A	SD of Detected Logged Data						N/A
4409												
4410	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
4411	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
4412	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
4413												
4414	**The data set for variable Selenium (10 - 12) was not processed!**											
4415												
4416												
4417	**Silver (0 - 0.5)**											
4418												
4419	**General Statistics**											
4420	Total Number of Observations				8	Number of Missing Observations						0
4421	Number of Distinct Observations				7							
4422	Number of Detects				0	Number of Non-Detects						8
4423	Number of Distinct Detects				0	Number of Distinct Non-Detects						7
4424	Minimum Detect				N/A	Minimum Non-Detect						0.63
4425	Maximum Detect				N/A	Maximum Non-Detect						0.91
4426	Variance Detected				N/A	Percent Non-Detects						100%
4427	Mean Detected				N/A	SD Detected						N/A
4428	Mean of Detected Logged Data				N/A	SD of Detected Logged Data						N/A
4429												
4430	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
4431	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
4432	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
4433												
4434	**The data set for variable Silver (0 - 0.5) was not processed!**											
4435												
4436												
4437	**Silver (0.5 - 2)**											
4438												
4439	**General Statistics**											
4440	Total Number of Observations				8	Number of Missing Observations						0
4441	Number of Distinct Observations				6							
4442	Number of Detects				0	Number of Non-Detects						8
4443	Number of Distinct Detects				0	Number of Distinct Non-Detects						6
4444	Minimum Detect				N/A	Minimum Non-Detect						0.66
4445	Maximum Detect				N/A	Maximum Non-Detect						0.93
4446	Variance Detected				N/A	Percent Non-Detects						100%
4447	Mean Detected				N/A	SD Detected						N/A
4448	Mean of Detected Logged Data				N/A	SD of Detected Logged Data						N/A
4449												
4450	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
4451	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
4452	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
4453												
4454	**The data set for variable Silver (0.5 - 2) was not processed!**											
4455												
4456												

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4457	**Silver (10 - 12)**										
4458											
4459	**General Statistics**										
4460	Total Number of Observations				8	Number of Missing Observations				0	
4461	Number of Distinct Observations				5						
4462	Number of Detects				0	Number of Non-Detects				8	
4463	Number of Distinct Detects				0	Number of Distinct Non-Detects				5	
4464	Minimum Detect				N/A	Minimum Non-Detect				0.59	
4465	Maximum Detect				N/A	Maximum Non-Detect				0.65	
4466	Variance Detected				N/A	Percent Non-Detects				100%	
4467	Mean Detected				N/A	SD Detected				N/A	
4468	Mean of Detected Logged Data				N/A	SD of Detected Logged Data				N/A	
4469											
4470	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**										
4471	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**										
4472	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**										
4473											
4474	**The data set for variable Silver (10 - 12) was not processed!**										
4475											
4476											
4477	**Sodium (0 - 0.5)**										
4478											
4479	**General Statistics**										
4480	Total Number of Observations				8	Number of Distinct Observations				8	
4481	Minimum				39.6	First Quartile				73.05	
4482	Second Largest				136	Median				86.9	
4483	Maximum				552	Third Quartile				135.3	
4484	Mean				147	SD				167	
4485	Coefficient of Variation				1.137	Skewness				2.609	
4486	Mean of logged Data				4.651	SD of logged Data				0.783	
4487											
4488	**Critical Values for Background Threshold Values (BTVs)**										
4489	Tolerance Factor K (For UTL)				2.582	d2max (for USL)				2.032	
4490											
4491	**Normal GOF Test**										
4492	Shapiro Wilk Test Statistic				0.608	**Shapiro Wilk GOF Test**					
4493	5% Shapiro Wilk Critical Value				0.818	Data Not Normal at 5% Significance Level					
4494	Lilliefors Test Statistic				0.401	**Lilliefors GOF Test**					
4495	5% Lilliefors Critical Value				0.283	Data Not Normal at 5% Significance Level					
4496	**Data Not Normal at 5% Significance Level**										
4497											
4498	**Background Statistics Assuming Normal Distribution**										
4499	95% UTL with 90% Coverage				578.2	90% Percentile (z)				361	
4500	95% UPL (t)				482.6	95% Percentile (z)				421.7	
4501	95% USL				486.3	99% Percentile (z)				535.5	
4502											
4503	**Gamma GOF Test**										
4504	A-D Test Statistic				0.806	**Anderson-Darling Gamma GOF Test**					
4505	5% A-D Critical Value				0.727	Data Not Gamma Distributed at 5% Significance Level					
4506	K-S Test Statistic				0.308	**Kolmogorov-Smirnov Gamma GOF Test**					
4507	5% K-S Critical Value				0.299	Data Not Gamma Distributed at 5% Significance Level					
4508	**Data Not Gamma Distributed at 5% Significance Level**										
4509											
4510	**Gamma Statistics**										
4511	k hat (MLE)				1.62	k star (bias corrected MLE)				1.096	
4512	Theta hat (MLE)				90.69	Theta star (bias corrected MLE)				134.1	
4513	nu hat (MLE)				25.93	nu star (bias corrected)				17.54	
4514	MLE Mean (bias corrected)				147	MLE Sd (bias corrected)				140.4	
4515											
4516	**Background Statistics Assuming Gamma Distribution**										
4517	95% Wilson Hilferty (WH) Approx. Gamma UPL				476.8	90% Percentile				330.8	
4518	95% Hawkins Wixley (HW) Approx. Gamma UPL				480.2	95% Percentile				426.2	
4519	95% WH Approx. Gamma UTL with 90% Coverage				647.4	99% Percentile				646.4	
4520	95% HW Approx. Gamma UTL with 90% Coverage				669.6						
4521	95% WH USL				482.8	95% HW USL				486.7	
4522											
4523	**Lognormal GOF Test**										
4524	Shapiro Wilk Test Statistic				0.885	**Shapiro Wilk Lognormal GOF Test**					
4525	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level					
4526	Lilliefors Test Statistic				0.244	**Lilliefors Lognormal GOF Test**					
4527	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level					
4528	**Data appear Lognormal at 5% Significance Level**										
4529											
4530	**Background Statistics assuming Lognormal Distribution**										
4531	95% UTL with 90% Coverage				790.9	90% Percentile (z)				285.6	
4532	95% UPL (t)				505.1	95% Percentile (z)				379.6	
4533	95% USL				513.9	99% Percentile (z)				647.4	
4534											
4535	**Nonparametric Distribution Free Background Statistics**										
4536	**Data appear Lognormal at 5% Significance Level**										
4537											
4538	**Nonparametric Upper Limits for Background Threshold Values**										
4539	Order of Statistic, r				8	95% UTL with 90% Coverage				552	
4540	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL				0.57	
4541						Approximate Sample Size needed to achieve specified CC				29	
4542	95% Percentile Bootstrap UTL with 90% Coverage				552	95% BCA Bootstrap UTL with 90% Coverage				552	

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4543				95% UPL	552				90% Percentile		260.8
4544				90% Chebyshev UPL	678.4				95% Percentile		406.4
4545				95% Chebyshev UPL	919.1				99% Percentile		522.9
4546				95% USL	552						
4547											
4548	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
4549	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
4550	and consists of observations collected from clean unimpacted locations.										
4551	The use of USL tends to provide a balance between false positives and false negatives provided the data										
4552	represents a background data set and when many onsite observations need to be compared with the BTV.										
4553											
4554	**Sodium (0.5 - 2)**										
4555											
4556	**General Statistics**										
4557				Total Number of Observations	8				Number of Distinct Observations		8
4558				Minimum	38.8				First Quartile		61.2
4559				Second Largest	251				Median		76
4560				Maximum	555				Third Quartile		133.2
4561				Mean	151.1				SD		176.2
4562				Coefficient of Variation	1.166				Skewness		2.19
4563				Mean of logged Data	4.607				SD of logged Data		0.879
4564											
4565	**Critical Values for Background Threshold Values (BTVs)**										
4566				Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
4567											
4568	**Normal GOF Test**										
4569				Shapiro Wilk Test Statistic	0.665				**Shapiro Wilk GOF Test**		
4570				5% Shapiro Wilk Critical Value	0.818				Data Not Normal at 5% Significance Level		
4571				Lilliefors Test Statistic	0.377				**Lilliefors GOF Test**		
4572				5% Lilliefors Critical Value	0.283				Data Not Normal at 5% Significance Level		
4573	**Data Not Normal at 5% Significance Level**										
4574											
4575	**Background Statistics Assuming Normal Distribution**										
4576				95% UTL with 90% Coverage	606				90% Percentile (z)		376.9
4577				95% UPL (t)	505.1				95% Percentile (z)		440.9
4578				95% USL	509				99% Percentile (z)		560.9
4579											
4580	**Gamma GOF Test**										
4581				A-D Test Statistic	0.842				**Anderson-Darling Gamma GOF Test**		
4582				5% A-D Critical Value	0.73				Data Not Gamma Distributed at 5% Significance Level		
4583				K-S Test Statistic	0.336				**Kolmogorov-Smirnov Gamma GOF Test**		
4584				5% K-S Critical Value	0.3				Data Not Gamma Distributed at 5% Significance Level		
4585	**Data Not Gamma Distributed at 5% Significance Level**										
4586											
4587	**Gamma Statistics**										
4588				k hat (MLE)	1.36				k star (bias corrected MLE)		0.933
4589				Theta hat (MLE)	111.1				Theta star (bias corrected MLE)		161.9
4590				nu hat (MLE)	21.76				nu star (bias corrected)		14.94
4591				MLE Mean (bias corrected)	151.1				MLE Sd (bias corrected)		156.4
4592											
4593	**Background Statistics Assuming Gamma Distribution**										
4594				95% Wilson Hilferty (WH) Approx. Gamma UPL	529.4				90% Percentile		353.9
4595				95% Hawkins Wixley (HW) Approx. Gamma UPL	538.5				95% Percentile		463.9
4596				95% WH Approx. Gamma UTL with 90% Coverage	732.8				99% Percentile		720.6
4597				95% HW Approx. Gamma UTL with 90% Coverage	769.9						
4598				95% WH USL	536.4				95% HW USL		546.3
4599											
4600	**Lognormal GOF Test**										
4601				Shapiro Wilk Test Statistic	0.865				**Shapiro Wilk Lognormal GOF Test**		
4602				5% Shapiro Wilk Critical Value	0.818				Data appear Lognormal at 5% Significance Level		
4603				Lilliefors Test Statistic	0.28				**Lilliefors Lognormal GOF Test**		
4604				5% Lilliefors Critical Value	0.283				Data appear Lognormal at 5% Significance Level		
4605	**Data appear Lognormal at 5% Significance Level**										
4606											
4607	**Background Statistics assuming Lognormal Distribution**										
4608				95% UTL with 90% Coverage	969.1				90% Percentile (z)		309.1
4609				95% UPL (t)	586				95% Percentile (z)		425.3
4610				95% USL	597.5				99% Percentile (z)		774.1
4611											
4612	**Nonparametric Distribution Free Background Statistics**										
4613	**Data appear Lognormal at 5% Significance Level**										
4614											
4615	**Nonparametric Upper Limits for Background Threshold Values**										
4616				Order of Statistic, r	8				95% UTL with 90% Coverage		555
4617				Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
4618									Approximate Sample Size needed to achieve specified CC		29
4619				95% Percentile Bootstrap UTL with 90% Coverage	555				95% BCA Bootstrap UTL with 90% Coverage		555
4620				95% UPL	555				90% Percentile		342.2
4621				90% Chebyshev UPL	711.7				95% Percentile		448.6
4622				95% Chebyshev UPL	965.6				99% Percentile		533.7
4623				95% USL	555						
4624											
4625	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.										
4626	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers										
4627	and consists of observations collected from clean unimpacted locations.										
4628	The use of USL tends to provide a balance between false positives and false negatives provided the data										

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4629	represents a background data set and when many onsite observations need to be compared with the BTV.											
4630												
4631	**Sodium (10 - 12)**											
4632												
4633	**General Statistics**											
4634	Total Number of Observations					8	Number of Missing Observations					0
4635	Number of Distinct Observations					7						
4636	Number of Detects					3	Number of Non-Detects					5
4637	Number of Distinct Detects					3	Number of Distinct Non-Detects					4
4638	Minimum Detect					35.2	Minimum Non-Detect					31.8
4639	Maximum Detect					64.3	Maximum Non-Detect					33.1
4640	Variance Detected					224.7	Percent Non-Detects					62.5%
4641	Mean Detected					47.67	SD Detected					14.99
4642	Mean of Detected Logged Data					3.832	SD of Detected Logged Data					0.306
4643												
4644	**Warning: Data set has only 3 Detected Values.**											
4645	**This is not enough to compute meaningful or reliable statistics and estimates.**											
4646												
4647												
4648	**Critical Values for Background Threshold Values (BTVs)**											
4649	Tolerance Factor K (For UTL)					2.582	d2max (for USL)					2.032
4650												
4651	**Normal GOF Test on Detects Only**											
4652	Shapiro Wilk Test Statistic					0.942	**Shapiro Wilk GOF Test**					
4653	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Normal at 5% Significance Level					
4654	Lilliefors Test Statistic					0.276	**Lilliefors GOF Test**					
4655	5% Lilliefors Critical Value					0.425	Detected Data appear Normal at 5% Significance Level					
4656	**Detected Data appear Normal at 5% Significance Level**											
4657												
4658	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
4659	KM Mean					37.75	KM SD					10.73
4660	95% UTL90% Coverage					65.46	95% KM UPL (t)					59.32
4661	90% KM Percentile (z)					51.5	95% KM Percentile (z)					55.4
4662	99% KM Percentile (z)					62.72	95% KM USL					59.55
4663												
4664	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
4665	Mean					28.04	SD					18.12
4666	95% UTL90% Coverage					74.83	95% UPL (t)					64.45
4667	90% Percentile (z)					51.26	95% Percentile (z)					57.85
4668	99% Percentile (z)					70.19	95% USL					64.85
4669	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
4670												
4671	**Gamma GOF Tests on Detected Observations Only**											
4672	**Not Enough Data to Perform GOF Test**											
4673												
4674	**Gamma Statistics on Detected Data Only**											
4675	k hat (MLE)					15.9	k star (bias corrected MLE)					N/A
4676	Theta hat (MLE)					2.998	Theta star (bias corrected MLE)					N/A
4677	nu hat (MLE)					95.4	nu star (bias corrected)					N/A
4678	MLE Mean (bias corrected)					N/A						
4679	MLE Sd (bias corrected)					N/A	95% Percentile of Chisquare (2kstar)					N/A
4680												
4681	**Gamma ROS Statistics using Imputed Non-Detects**											
4682	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
4683	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
4684	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
4685	This is especially true when the sample size is small.											
4686	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
4687	Minimum					0.01	Mean					18.62
4688	Maximum					64.3	Median					2.958
4689	SD					25.43	CV					1.366
4690	k hat (MLE)					0.205	k star (bias corrected MLE)					0.212
4691	Theta hat (MLE)					90.63	Theta star (bias corrected MLE)					87.94
4692	nu hat (MLE)					3.287	nu star (bias corrected)					3.388
4693	MLE Mean (bias corrected)					18.62	MLE Sd (bias corrected)					40.46
4694	95% Percentile of Chisquare (2kstar)					2.149	90% Percentile					56.3
4695	95% Percentile					94.49	99% Percentile					198.7
4696	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
4697	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
4698		WH	HW					WH	HW			
4699	95% Approx. Gamma UTL with 90% Coverage	220.4	338.2				95% Approx. Gamma UPL	130.7	174.2			
4700	95% Gamma USL	133.6	179.1									
4701												
4702	**Estimates of Gamma Parameters using KM Estimates**											
4703	Mean (KM)					37.75	SD (KM)					10.73
4704	Variance (KM)					115.2	SE of Mean (KM)					4.647
4705	k hat (KM)					12.37	k star (KM)					7.816
4706	nu hat (KM)					198	nu star (KM)					125.1
4707	theta hat (KM)					3.051	theta star (KM)					4.83
4708	80% gamma percentile (KM)					48.4	90% gamma percentile (KM)					55.76
4709	95% gamma percentile (KM)					62.35	99% gamma percentile (KM)					76.02
4710												
4711	**The following statistics are computed using gamma distribution and KM estimates**											
4712	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
4713		WH	HW					WH	HW			
4714	95% Approx. Gamma UTL with 90% Coverage	68.95	69.22				95% Approx. Gamma UPL	58.97	58.93			

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
4715	95% KM Gamma Percentile				54.45	54.33	95% Gamma USL				59.25	59.22
4716												
4717	**Lognormal GOF Test on Detected Observations Only**											
4718	Shapiro Wilk Test Statistic					0.971	**Shapiro Wilk GOF Test**					
4719	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
4720	Lilliefors Test Statistic					0.244	**Lilliefors GOF Test**					
4721	5% Lilliefors Critical Value					0.425	Detected Data appear Lognormal at 5% Significance Level					
4722	**Detected Data appear Lognormal at 5% Significance Level**											
4723												
4724	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
4725	Mean in Original Scale					26.93	Mean in Log Scale					3.101
4726	SD in Original Scale					19.04	SD in Log Scale					0.642
4727	95% UTL90% Coverage					116.4	95% BCA UTL90% Coverage					64.3
4728	95% Bootstrap (%) UTL90% Coverage					64.3	95% UPL (t)					80.61
4729	90% Percentile (z)					50.54	95% Percentile (z)					63.8
4730	99% Percentile (z)					98.78	95% USL					81.77
4731												
4732	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
4733	KM Mean of Logged Data					3.599	95% KM UTL (Lognormal)90% Coverage					67.37
4734	KM SD of Logged Data					0.237	95% KM UPL (Lognormal)					58.83
4735	95% KM Percentile Lognormal (z)					53.97	95% KM USL (Lognormal)					59.14
4736												
4737	**Background DL/2 Statistics Assuming Lognormal Distribution**											
4738	Mean in Original Scale					28.04	Mean in Log Scale					3.18
4739	SD in Original Scale					18.12	SD in Log Scale					0.564
4740	95% UTL90% Coverage					103.3	95% UPL (t)					74.76
4741	90% Percentile (z)					49.58	95% Percentile (z)					60.85
4742	99% Percentile (z)					89.39	95% USL					75.7
4743	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
4744												
4745	**Nonparametric Distribution Free Background Statistics**											
4746	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
4747												
4748	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
4749	Order of Statistic, r					8	95% UTL with90% Coverage					64.3
4750	Approx, f used to compute achieved CC					0.889	Approximate Actual Confidence Coefficient achieved by UTL					0.57
4751	Approximate Sample Size needed to achieve specified CC					29	95% UPL					64.3
4752	95% USL					64.3	95% KM Chebyshev UPL					87.37
4753												
4754	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
4755	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
4756	and consists of observations collected from clean unimpacted locations.											
4757	The use of USL tends to provide a balance between false positives and false negatives provided the data											
4758	represents a background data set and when many onsite observations need to be compared with the BTV.											
4759												
4760	**Thallium (0 - 0.5)**											
4761												
4762	**General Statistics**											
4763	Total Number of Observations					8	Number of Missing Observations					0
4764	Number of Distinct Observations					5						
4765	Number of Detects					0	Number of Non-Detects					8
4766	Number of Distinct Detects					0	Number of Distinct Non-Detects					5
4767	Minimum Detect					N/A	Minimum Non-Detect					0.13
4768	Maximum Detect					N/A	Maximum Non-Detect					0.19
4769	Variance Detected					N/A	Percent Non-Detects					100%
4770	Mean Detected					N/A	SD Detected					N/A
4771	Mean of Detected Logged Data					N/A	SD of Detected Logged Data					N/A
4772												
4773	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
4774	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
4775	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
4776												
4777	**The data set for variable Thallium (0 - 0.5) was not processed!**											
4778												
4779												
4780	**Thallium (0.5 - 2)**											
4781												
4782	**General Statistics**											
4783	Total Number of Observations					8	Number of Missing Observations					0
4784	Number of Distinct Observations					4						
4785	Number of Detects					0	Number of Non-Detects					8
4786	Number of Distinct Detects					0	Number of Distinct Non-Detects					4
4787	Minimum Detect					N/A	Minimum Non-Detect					0.14
4788	Maximum Detect					N/A	Maximum Non-Detect					0.19
4789	Variance Detected					N/A	Percent Non-Detects					100%
4790	Mean Detected					N/A	SD Detected					N/A
4791	Mean of Detected Logged Data					N/A	SD of Detected Logged Data					N/A
4792												
4793	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
4794	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
4795	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
4796												
4797	**The data set for variable Thallium (0.5 - 2) was not processed!**											
4798												
4799												
4800	**Thallium (10 - 12)**											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
4801												
4802	**General Statistics**											
4803					Total Number of Observations	8			Number of Missing Observations			0
4804					Number of Distinct Observations	2						
4805					Number of Detects	0			Number of Non-Detects			8
4806					Number of Distinct Detects	0			Number of Distinct Non-Detects			2
4807					Minimum Detect	N/A			Minimum Non-Detect			0.12
4808					Maximum Detect	N/A			Maximum Non-Detect			0.13
4809					Variance Detected	N/A			Percent Non-Detects			100%
4810					Mean Detected	N/A			SD Detected			N/A
4811					Mean of Detected Logged Data	N/A			SD of Detected Logged Data			N/A
4812												
4813	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
4814	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
4815	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
4816												
4817	**The data set for variable Thallium (10 - 12) was not processed!**											
4818												
4819												
4820	**Vanadium (0 - 0.5)**											
4821												
4822	**General Statistics**											
4823					Total Number of Observations	8			Number of Distinct Observations			8
4824					Minimum	7.7			First Quartile			12.15
4825					Second Largest	15.9			Median			13.4
4826					Maximum	16.5			Third Quartile			15
4827					Mean	13.1			SD			2.892
4828					Coefficient of Variation	0.221			Skewness			-0.862
4829					Mean of logged Data	2.548			SD of logged Data			0.249
4830												
4831	**Critical Values for Background Threshold Values (BTVs)**											
4832					Tolerance Factor K (For UTL)	2.582			d2max (for USL)			2.032
4833												
4834	**Normal GOF Test**											
4835					Shapiro Wilk Test Statistic	0.942			**Shapiro Wilk GOF Test**			
4836					5% Shapiro Wilk Critical Value	0.818			Data appear Normal at 5% Significance Level			
4837					Lilliefors Test Statistic	0.195			**Lilliefors GOF Test**			
4838					5% Lilliefors Critical Value	0.283			Data appear Normal at 5% Significance Level			
4839	**Data appear Normal at 5% Significance Level**											
4840												
4841	**Background Statistics Assuming Normal Distribution**											
4842					95% UTL with 90% Coverage	20.57			90% Percentile (z)			16.81
4843					95% UPL (t)	18.91			95% Percentile (z)			17.86
4844					95% USL	18.98			99% Percentile (z)			19.83
4845												
4846	**Gamma GOF Test**											
4847					A-D Test Statistic	0.365			**Anderson-Darling Gamma GOF Test**			
4848					5% A-D Critical Value	0.716			Detected data appear Gamma Distributed at 5% Significance Level			
4849					K-S Test Statistic	0.224			**Kolmogorov-Smirnov Gamma GOF Test**			
4850					5% K-S Critical Value	0.294			Detected data appear Gamma Distributed at 5% Significance Level			
4851	**Detected data appear Gamma Distributed at 5% Significance Level**											
4852												
4853	**Gamma Statistics**											
4854					k hat (MLE)	20.21			k star (bias corrected MLE)			12.71
4855					Theta hat (MLE)	0.648			Theta star (bias corrected MLE)			1.03
4856					nu hat (MLE)	323.4			nu star (bias corrected)			203.4
4857					MLE Mean (bias corrected)	13.1			MLE Sd (bias corrected)			3.674
4858												
4859	**Background Statistics Assuming Gamma Distribution**											
4860					95% Wilson Hilferty (WH) Approx. Gamma UPL	20.13			90% Percentile			17.97
4861					95% Hawkins Wixley (HW) Approx. Gamma UPL	20.33			95% Percentile			19.67
4862					95% WH Approx. Gamma UTL with 90% Coverage	22.6			99% Percentile			23.12
4863					95% HW Approx. Gamma UTL with 90% Coverage	22.96						
4864					95% WH USL	20.22			95% HW USL			20.43
4865												
4866	**Lognormal GOF Test**											
4867					Shapiro Wilk Test Statistic	0.889			**Shapiro Wilk Lognormal GOF Test**			
4868					5% Shapiro Wilk Critical Value	0.818			Data appear Lognormal at 5% Significance Level			
4869					Lilliefors Test Statistic	0.24			**Lilliefors Lognormal GOF Test**			
4870					5% Lilliefors Critical Value	0.283			Data appear Lognormal at 5% Significance Level			
4871	**Data appear Lognormal at 5% Significance Level**											
4872												
4873	**Background Statistics assuming Lognormal Distribution**											
4874					95% UTL with 90% Coverage	24.3			90% Percentile (z)			17.58
4875					95% UPL (t)	21.08			95% Percentile (z)			19.25
4876					95% USL	21.19			99% Percentile (z)			22.81
4877												
4878	**Nonparametric Distribution Free Background Statistics**											
4879	**Data appear Normal at 5% Significance Level**											
4880												
4881	**Nonparametric Upper Limits for Background Threshold Values**											
4882					Order of Statistic, r	8			95% UTL with 90% Coverage			16.5
4883					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL			0.57
4884									Approximate Sample Size needed to achieve specified CC			29
4885					95% Percentile Bootstrap UTL with 90% Coverage	16.5			95% BCA Bootstrap UTL with 90% Coverage			16.5
4886					95% UPL	16.5			90% Percentile			16.08

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
4887				90% Chebyshev UPL		22.3				95% Percentile		16.29
4888				95% Chebyshev UPL		26.47				99% Percentile		16.46
4889				95% USL		16.5						
4890												
4891	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
4892	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
4893	and consists of observations collected from clean unimpacted locations.											
4894	The use of USL tends to provide a balance between false positives and false negatives provided the data											
4895	represents a background data set and when many onsite observations need to be compared with the BTV.											
4896												
4897	**Vanadium (0.5 - 2)**											
4898												
4899	**General Statistics**											
4900				Total Number of Observations		8				Number of Distinct Observations		8
4901				Minimum		7.4				First Quartile		11.83
4902				Second Largest		14				Median		12.5
4903				Maximum		15.1				Third Quartile		13.48
4904				Mean		12.26				SD		2.297
4905				Coefficient of Variation		0.187				Skewness		-1.362
4906				Mean of logged Data		2.488				SD of logged Data		0.216
4907												
4908	**Critical Values for Background Threshold Values (BTVs)**											
4909				Tolerance Factor K (For UTL)		2.582				d2max (for USL)		2.032
4910												
4911	**Normal GOF Test**											
4912				Shapiro Wilk Test Statistic		0.896			**Shapiro Wilk GOF Test**			
4913				5% Shapiro Wilk Critical Value		0.818			Data appear Normal at 5% Significance Level			
4914				Lilliefors Test Statistic		0.213			**Lilliefors GOF Test**			
4915				5% Lilliefors Critical Value		0.283			Data appear Normal at 5% Significance Level			
4916	**Data appear Normal at 5% Significance Level**											
4917												
4918	**Background Statistics Assuming Normal Distribution**											
4919				95% UTL with 90% Coverage		18.19				90% Percentile (z)		15.21
4920				95% UPL (t)		16.88				95% Percentile (z)		16.04
4921				95% USL		16.93				99% Percentile (z)		17.61
4922												
4923	**Gamma GOF Test**											
4924				A-D Test Statistic		0.582			**Anderson-Darling Gamma GOF Test**			
4925				5% A-D Critical Value		0.716			Detected data appear Gamma Distributed at 5% Significance Level			
4926				K-S Test Statistic		0.236			**Kolmogorov-Smirnov Gamma GOF Test**			
4927				5% K-S Critical Value		0.294			Detected data appear Gamma Distributed at 5% Significance Level			
4928	**Detected data appear Gamma Distributed at 5% Significance Level**											
4929												
4930	**Gamma Statistics**											
4931				k hat (MLE)		27.14				k star (bias corrected MLE)		17.05
4932				Theta hat (MLE)		0.452				Theta star (bias corrected MLE)		0.719
4933				nu hat (MLE)		434.3				nu star (bias corrected)		272.8
4934				MLE Mean (bias corrected)		12.26				MLE Sd (bias corrected)		2.97
4935												
4936	**Background Statistics Assuming Gamma Distribution**											
4937				95% Wilson Hilferty (WH) Approx. Gamma UPL		17.85				90% Percentile		16.19
4938				95% Hawkins Wixley (HW) Approx. Gamma UPL		18.02				95% Percentile		17.52
4939				95% WH Approx. Gamma UTL with 90% Coverage		19.77				99% Percentile		20.21
4940				95% HW Approx. Gamma UTL with 90% Coverage		20.04						
4941				95% WH USL		17.93				95% HW USL		18.09
4942												
4943	**Lognormal GOF Test**											
4944				Shapiro Wilk Test Statistic		0.819			**Shapiro Wilk Lognormal GOF Test**			
4945				5% Shapiro Wilk Critical Value		0.818			Data appear Lognormal at 5% Significance Level			
4946				Lilliefors Test Statistic		0.26			**Lilliefors Lognormal GOF Test**			
4947				5% Lilliefors Critical Value		0.283			Data appear Lognormal at 5% Significance Level			
4948	**Data appear Lognormal at 5% Significance Level**											
4949												
4950	**Background Statistics assuming Lognormal Distribution**											
4951				95% UTL with 90% Coverage		21.05				90% Percentile (z)		15.88
4952				95% UPL (t)		18.59				95% Percentile (z)		17.18
4953				95% USL		18.68				99% Percentile (z)		19.91
4954												
4955	**Nonparametric Distribution Free Background Statistics**											
4956	**Data appear Normal at 5% Significance Level**											
4957												
4958	**Nonparametric Upper Limits for Background Threshold Values**											
4959				Order of Statistic, r		8				95% UTL with 90% Coverage		15.1
4960				Approx, f used to compute achieved CC		0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
4961										Approximate Sample Size needed to achieve specified CC		29
4962				95% Percentile Bootstrap UTL with 90% Coverage		15.1				95% BCA Bootstrap UTL with 90% Coverage		15.1
4963				95% UPL		15.1				90% Percentile		14.33
4964				90% Chebyshev UPL		19.57				95% Percentile		14.72
4965				95% Chebyshev UPL		22.88				99% Percentile		15.02
4966				95% USL		15.1						
4967												
4968	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
4969	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
4970	and consists of observations collected from clean unimpacted locations.											
4971	The use of USL tends to provide a balance between false positives and false negatives provided the data											
4972	represents a background data set and when many onsite observations need to be compared with the BTV.											

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

4973											
4974	**Vanadium (10 - 12)**										
4975											
4976	**General Statistics**										
4977					Total Number of Observations	8			Number of Distinct Observations	8	
4978					Minimum	4.9			First Quartile	6.625	
4979					Second Largest	10.4			Median	7.75	
4980					Maximum	10.5			Third Quartile	9.575	
4981					Mean	7.963			SD	2.04	
4982					Coefficient of Variation	0.256			Skewness	-0.0511	
4983					Mean of logged Data	2.044			SD of logged Data	0.268	
4984											
4985					**Critical Values for Background Threshold Values (BTVs)**						
4986					Tolerance Factor K (For UTL)	2.582			d2max (for USL)	2.032	
4987											
4988					**Normal GOF Test**						
4989					Shapiro Wilk Test Statistic	0.93			**Shapiro Wilk GOF Test**		
4990					5% Shapiro Wilk Critical Value	0.818			Data appear Normal at 5% Significance Level		
4991					Lilliefors Test Statistic	0.199			**Lilliefors GOF Test**		
4992					5% Lilliefors Critical Value	0.283			Data appear Normal at 5% Significance Level		
4993					**Data appear Normal at 5% Significance Level**						
4994											
4995					**Background Statistics Assuming Normal Distribution**						
4996					95% UTL with 90% Coverage	13.23			90% Percentile (z)	10.58	
4997					95% UPL (t)	12.06			95% Percentile (z)	11.32	
4998					95% USL	12.11			99% Percentile (z)	12.71	
4999											
5000					**Gamma GOF Test**						
5001					A-D Test Statistic	0.323			**Anderson-Darling Gamma GOF Test**		
5002					5% A-D Critical Value	0.716			Detected data appear Gamma Distributed at 5% Significance Level		
5003					K-S Test Statistic	0.187			**Kolmogorov-Smirnov Gamma GOF Test**		
5004					5% K-S Critical Value	0.294			Detected data appear Gamma Distributed at 5% Significance Level		
5005					**Detected data appear Gamma Distributed at 5% Significance Level**						
5006											
5007					**Gamma Statistics**						
5008					k hat (MLE)	16.57			k star (bias corrected MLE)	10.44	
5009					Theta hat (MLE)	0.481			Theta star (bias corrected MLE)	0.763	
5010					nu hat (MLE)	265.1			nu star (bias corrected)	167	
5011					MLE Mean (bias corrected)	7.963			MLE Sd (bias corrected)	2.464	
5012											
5013					**Background Statistics Assuming Gamma Distribution**						
5014					95% Wilson Hilferty (WH) Approx. Gamma UPL	12.73			90% Percentile	11.24	
5015					95% Hawkins Wixley (HW) Approx. Gamma UPL	12.84			95% Percentile	12.4	
5016					95% WH Approx. Gamma UTL with 90% Coverage	14.44			99% Percentile	14.78	
5017					95% HW Approx. Gamma UTL with 90% Coverage	14.66					
5018					95% WH USL	12.79			95% HW USL	12.91	
5019											
5020					**Lognormal GOF Test**						
5021					Shapiro Wilk Test Statistic	0.929			**Shapiro Wilk Lognormal GOF Test**		
5022					5% Shapiro Wilk Critical Value	0.818			Data appear Lognormal at 5% Significance Level		
5023					Lilliefors Test Statistic	0.163			**Lilliefors Lognormal GOF Test**		
5024					5% Lilliefors Critical Value	0.283			Data appear Lognormal at 5% Significance Level		
5025					**Data appear Lognormal at 5% Significance Level**						
5026											
5027					**Background Statistics assuming Lognormal Distribution**						
5028					95% UTL with 90% Coverage	15.44			90% Percentile (z)	10.89	
5029					95% UPL (t)	13.24			95% Percentile (z)	12.01	
5030					95% USL	13.32			99% Percentile (z)	14.42	
5031											
5032					**Nonparametric Distribution Free Background Statistics**						
5033					**Data appear Normal at 5% Significance Level**						
5034											
5035					**Nonparametric Upper Limits for Background Threshold Values**						
5036					Order of Statistic, r	8			95% UTL with 90% Coverage	10.5	
5037					Approx, f used to compute achieved CC	0.889			Approximate Actual Confidence Coefficient achieved by UTL	0.57	
5038									Approximate Sample Size needed to achieve specified CC	29	
5039					95% Percentile Bootstrap UTL with 90% Coverage	10.5			95% BCA Bootstrap UTL with 90% Coverage	10.5	
5040					95% UPL	10.5			90% Percentile	10.43	
5041					90% Chebyshev UPL	14.45			95% Percentile	10.47	
5042					95% Chebyshev UPL	17.39			99% Percentile	10.49	
5043					95% USL	10.5					
5044											
5045					Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.						
5046					Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers						
5047					and consists of observations collected from clean unimpacted locations.						
5048					The use of USL tends to provide a balance between false positives and false negatives provided the data						
5049					represents a background data set and when many onsite observations need to be compared with the BTV.						
5050											
5051	**Zinc (0 - 0.5)**										
5052											
5053	**General Statistics**										
5054					Total Number of Observations	8			Number of Distinct Observations	8	
5055					Minimum	13.6			First Quartile	49.85	
5056					Second Largest	72			Median	58.65	
5057					Maximum	79.6			Third Quartile	68.1	
5058					Mean	55.91			SD	20.16	

Preliminary - Under EPA and MDEQ Review

Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

5059				Coefficient of Variation	0.361					Skewness	-1.341	
5060				Mean of logged Data	3.924					SD of logged Data	0.558	
5061												
5062				**Critical Values for Background Threshold Values (BTVs)**								
5063				Tolerance Factor K (For UTL)	2.582					d2max (for USL)	2.032	
5064												
5065				**Normal GOF Test**								
5066				Shapiro Wilk Test Statistic	0.901	**Shapiro Wilk GOF Test**						
5067				5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level						
5068				Lilliefors Test Statistic	0.21	**Lilliefors GOF Test**						
5069				5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level						
5070				**Data appear Normal at 5% Significance Level**								
5071												
5072				**Background Statistics Assuming Normal Distribution**								
5073				95% UTL with 90% Coverage	108	90% Percentile (z)	81.75					
5074				95% UPL (t)	96.43	95% Percentile (z)	89.08					
5075				95% USL	96.88	99% Percentile (z)	102.8					
5076												
5077				**Gamma GOF Test**								
5078				A-D Test Statistic	0.795	**Anderson-Darling Gamma GOF Test**						
5079				5% A-D Critical Value	0.719	Data Not Gamma Distributed at 5% Significance Level						
5080				K-S Test Statistic	0.288	**Kolmogorov-Smirnov Gamma GOF Test**						
5081				5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level						
5082				**Detected data follow Appr. Gamma Distribution at 5% Significance Level**								
5083												
5084				**Gamma Statistics**								
5085				k hat (MLE)	5.165	k star (bias corrected MLE)	3.311					
5086				Theta hat (MLE)	10.83	Theta star (bias corrected MLE)	16.89					
5087				nu hat (MLE)	82.63	nu star (bias corrected)	52.98					
5088				MLE Mean (bias corrected)	55.91	MLE Sd (bias corrected)	30.73					
5089												
5090				**Background Statistics Assuming Gamma Distribution**								
5091				95% Wilson Hilferty (WH) Approx. Gamma UPL	121	90% Percentile	97.11					
5092				95% Hawkins Wixley (HW) Approx. Gamma UPL	127	95% Percentile	114.1					
5093				95% WH Approx. Gamma UTL with 90% Coverage	147.8	99% Percentile	150.7					
5094				95% HW Approx. Gamma UTL with 90% Coverage	158.4							
5095				95% WH USL	122	95% HW USL	128.1					
5096												
5097				**Lognormal GOF Test**								
5098				Shapiro Wilk Test Statistic	0.718	**Shapiro Wilk Lognormal GOF Test**						
5099				5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level						
5100				Lilliefors Test Statistic	0.327	**Lilliefors Lognormal GOF Test**						
5101				5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level						
5102				**Data Not Lognormal at 5% Significance Level**								
5103												
5104				**Background Statistics assuming Lognormal Distribution**								
5105				95% UTL with 90% Coverage	213.8	90% Percentile (z)	103.5					
5106				95% UPL (t)	155.3	95% Percentile (z)	126.7					
5107				95% USL	157.3	99% Percentile (z)	185.4					
5108												
5109				**Nonparametric Distribution Free Background Statistics**								
5110				**Data appear Normal at 5% Significance Level**								
5111												
5112				**Nonparametric Upper Limits for Background Threshold Values**								
5113				Order of Statistic, r	8	95% UTL with 90% Coverage	79.6					
5114				Approx, f used to compute achieved CC	0.889	Approximate Actual Confidence Coefficient achieved by UTL	0.57					
5115						Approximate Sample Size needed to achieve specified CC	29					
5116				95% Percentile Bootstrap UTL with 90% Coverage	79.6	95% BCA Bootstrap UTL with 90% Coverage	79.6					
5117				95% UPL	79.6	90% Percentile	74.28					
5118				90% Chebyshev UPL	120.1	95% Percentile	76.94					
5119				95% Chebyshev UPL	149.1	99% Percentile	79.07					
5120				95% USL	79.6							
5121												
5122				Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.								
5123				Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers								
5124				and consists of observations collected from clean unimpacted locations.								
5125				The use of USL tends to provide a balance between false positives and false negatives provided the data								
5126				represents a background data set and when many onsite observations need to be compared with the BTV.								
5127												
5128	**Zinc (0.5 - 2)**											
5129												
5130	**General Statistics**											
5131				Total Number of Observations	8	Number of Distinct Observations	8					
5132				Minimum	12.6	First Quartile	44.2					
5133				Second Largest	53.7	Median	49					
5134				Maximum	59.9	Third Quartile	52.5					
5135				Mean	44.91	SD	14.73					
5136				Coefficient of Variation	0.328	Skewness	-1.774					
5137				Mean of logged Data	3.722	SD of logged Data	0.502					
5138												
5139				**Critical Values for Background Threshold Values (BTVs)**								
5140				Tolerance Factor K (For UTL)	2.582	d2max (for USL)	2.032					
5141												
5142				**Normal GOF Test**								
5143				Shapiro Wilk Test Statistic	0.82	**Shapiro Wilk GOF Test**						
5144				5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level						

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Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

	A	B	C	D	E	F	G	H	I	J	K	L
5145					Lilliefors Test Statistic	0.304	**Lilliefors GOF Test**					
5146					5% Lilliefors Critical Value	0.283	Data Not Normal at 5% Significance Level					
5147	**Data appear Approximate Normal at 5% Significance Level**											
5148												
5149	**Background Statistics Assuming Normal Distribution**											
5150				95% UTL with	90% Coverage	82.95				90% Percentile (z)		63.79
5151					95% UPL (t)	74.52				95% Percentile (z)		69.14
5152					95% USL	74.84				99% Percentile (z)		79.18
5153												
5154	**Gamma GOF Test**											
5155					A-D Test Statistic	1.054	**Anderson-Darling Gamma GOF Test**					
5156					5% A-D Critical Value	0.718	Data Not Gamma Distributed at 5% Significance Level					
5157					K-S Test Statistic	0.346	**Kolmogorov-Smirnov Gamma GOF Test**					
5158					5% K-S Critical Value	0.295	Data Not Gamma Distributed at 5% Significance Level					
5159	**Data Not Gamma Distributed at 5% Significance Level**											
5160												
5161	**Gamma Statistics**											
5162					k hat (MLE)	6.239				k star (bias corrected MLE)		3.983
5163					Theta hat (MLE)	7.198				Theta star (bias corrected MLE)		11.28
5164					nu hat (MLE)	99.83				nu star (bias corrected)		63.73
5165					MLE Mean (bias corrected)	44.91				MLE Sd (bias corrected)		22.5
5166												
5167	**Background Statistics Assuming Gamma Distribution**											
5168				95% Wilson Hilferty (WH) Approx. Gamma UPL		91.75				90% Percentile		75.08
5169				95% Hawkins Wixley (HW) Approx. Gamma UPL		95.72				95% Percentile		87.16
5170				95% WH Approx. Gamma UTL with	90% Coverage	110.5				99% Percentile		113
5171				95% HW Approx. Gamma UTL with	90% Coverage	117.4						
5172					95% WH USL	92.43				95% HW USL		96.5
5173												
5174	**Lognormal GOF Test**											
5175					Shapiro Wilk Test Statistic	0.675	**Shapiro Wilk Lognormal GOF Test**					
5176					5% Shapiro Wilk Critical Value	0.818	Data Not Lognormal at 5% Significance Level					
5177					Lilliefors Test Statistic	0.349	**Lilliefors Lognormal GOF Test**					
5178					5% Lilliefors Critical Value	0.283	Data Not Lognormal at 5% Significance Level					
5179	**Data Not Lognormal at 5% Significance Level**											
5180												
5181	**Background Statistics assuming Lognormal Distribution**											
5182				95% UTL with	90% Coverage	151.3				90% Percentile (z)		78.73
5183					95% UPL (t)	113.5				95% Percentile (z)		94.49
5184					95% USL	114.7				99% Percentile (z)		133.1
5185												
5186	**Nonparametric Distribution Free Background Statistics**											
5187	**Data appear Approximate Normal at 5% Significance Level**											
5188												
5189	**Nonparametric Upper Limits for Background Threshold Values**											
5190					Order of Statistic, r	8				95% UTL with	90% Coverage	59.9
5191					Approx, f used to compute achieved CC	0.889				Approximate Actual Confidence Coefficient achieved by UTL		0.57
5192										Approximate Sample Size needed to achieve specified CC		29
5193				95% Percentile Bootstrap UTL with	90% Coverage	59.9				95% BCA Bootstrap UTL with	90% Coverage	59.9
5194					95% UPL	59.9				90% Percentile		55.56
5195					90% Chebyshev UPL	91.79				95% Percentile		57.73
5196					95% Chebyshev UPL	113				99% Percentile		59.47
5197					95% USL	59.9						
5198												
5199	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
5200	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
5201	and consists of observations collected from clean unimpacted locations.											
5202	The use of USL tends to provide a balance between false positives and false negatives provided the data											
5203	represents a background data set and when many onsite observations need to be compared with the BTV.											
5204												
5205	**Zinc (10 - 12)**											
5206												
5207	**General Statistics**											
5208					Total Number of Observations	8				Number of Distinct Observations		8
5209					Minimum	16.9				First Quartile		24.3
5210					Second Largest	32.4				Median		28.8
5211					Maximum	41.3				Third Quartile		31.88
5212					Mean	28.46				SD		7.252
5213					Coefficient of Variation	0.255				Skewness		0.229
5214					Mean of logged Data	3.319				SD of logged Data		0.266
5215												
5216	**Critical Values for Background Threshold Values (BTVs)**											
5217					Tolerance Factor K (For UTL)	2.582				d2max (for USL)		2.032
5218												
5219	**Normal GOF Test**											
5220					Shapiro Wilk Test Statistic	0.979	**Shapiro Wilk GOF Test**					
5221					5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level					
5222					Lilliefors Test Statistic	0.169	**Lilliefors GOF Test**					
5223					5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level					
5224	**Data appear Normal at 5% Significance Level**											
5225												
5226	**Background Statistics Assuming Normal Distribution**											
5227				95% UTL with	90% Coverage	47.19				90% Percentile (z)		37.76
5228					95% UPL (t)	43.03				95% Percentile (z)		40.39
5229					95% USL	43.2				99% Percentile (z)		45.33
5230												

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Table P. ProUCL Outputs for Background Threshold Values
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization
2000 Aluminum Drive, Columbia Falls, MT

5231	**Gamma GOF Test**											
5232	A-D Test Statistic				0.203	**Anderson-Darling Gamma GOF Test**						
5233	5% A-D Critical Value				0.716	Detected data appear Gamma Distributed at 5% Significance Level						
5234	K-S Test Statistic				0.148	**Kolmogorov-Smirnov Gamma GOF Test**						
5235	5% K-S Critical Value				0.294	Detected data appear Gamma Distributed at 5% Significance Level						
5236	**Detected data appear Gamma Distributed at 5% Significance Level**											
5237												
5238	**Gamma Statistics**											
5239	k hat (MLE)				16.9	k star (bias corrected MLE)						10.65
5240	Theta hat (MLE)				1.684	Theta star (bias corrected MLE)						2.673
5241	nu hat (MLE)				270.5	nu star (bias corrected)						170.4
5242	MLE Mean (bias corrected)				28.46	MLE Sd (bias corrected)						8.722
5243												
5244	**Background Statistics Assuming Gamma Distribution**											
5245	95% Wilson Hilferty (WH) Approx. Gamma UPL				45.31	90% Percentile						40.06
5246	95% Hawkins Wixley (HW) Approx. Gamma UPL				45.71	95% Percentile						44.16
5247	95% WH Approx. Gamma UTL with 90% Coverage				51.34	99% Percentile						52.57
5248	95% HW Approx. Gamma UTL with 90% Coverage				52.1							
5249	95% WH USL				45.53	95% HW USL						45.95
5250												
5251	**Lognormal GOF Test**											
5252	Shapiro Wilk Test Statistic				0.969	**Shapiro Wilk Lognormal GOF Test**						
5253	5% Shapiro Wilk Critical Value				0.818	Data appear Lognormal at 5% Significance Level						
5254	Lilliefors Test Statistic				0.161	**Lilliefors Lognormal GOF Test**						
5255	5% Lilliefors Critical Value				0.283	Data appear Lognormal at 5% Significance Level						
5256	**Data appear Lognormal at 5% Significance Level**											
5257												
5258	**Background Statistics assuming Lognormal Distribution**											
5259	95% UTL with 90% Coverage				54.93	90% Percentile (z)						38.86
5260	95% UPL (t)				47.17	95% Percentile (z)						42.8
5261	95% USL				47.45	99% Percentile (z)						51.32
5262												
5263	**Nonparametric Distribution Free Background Statistics**											
5264	**Data appear Normal at 5% Significance Level**											
5265												
5266	**Nonparametric Upper Limits for Background Threshold Values**											
5267	Order of Statistic, r				8	95% UTL with 90% Coverage						41.3
5268	Approx, f used to compute achieved CC				0.889	Approximate Actual Confidence Coefficient achieved by UTL						0.57
5269						Approximate Sample Size needed to achieve specified CC						29
5270	95% Percentile Bootstrap UTL with 90% Coverage				41.3	95% BCA Bootstrap UTL with 90% Coverage						41.3
5271	95% UPL				41.3	90% Percentile						35.07
5272	90% Chebyshev UPL				51.54	95% Percentile						38.19
5273	95% Chebyshev UPL				61.99	99% Percentile						40.68
5274	95% USL				41.3							
5275												
5276	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
5277	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
5278	and consists of observations collected from clean unimpacted locations.											
5279	The use of USL tends to provide a balance between false positives and false negatives provided the data											
5280	represents a background data set and when many onsite observations need to be compared with the BTV.											
5281												

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APPENDIX Q

ProUCL Background Threshold Values Summary Table

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Table Q. ProUCL Background Threshold Values Summary Table
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

	Surface (0-0.5 ft-bls)				Shallow (0.5-2 ft-bls)				Intermediate-Depth (10-12 ft-bls)			
Analytical Parameter	**Normal UTL**	**Gamma WH UTL**	**Gamma HW UTL**	**Non-Param UTL / Max**	**Normal UTL**	**Gamma WH UTL**	**Gamma HW UTL**	**Non-Param UTL / Max**	**Normal UTL**	**Gamma WH UTL**	**Gamma HW UTL**	**Non-Param UTL / Max**
Aluminum	32,443	33,417	33568	29200	32959	34,747	35,085	30900	15392	17207	17,587	13800
Arsenic	8.6	9.516	9.697	7.1	8.564	10.1	10.4	6.8	6.724	7.639	7.8	5.3
Barium	533.9	580.4	588.7	429	518.8	606.4	625.2	440	187.7	215.7	222.5	172
Beryllium	1.4	1.471	1.486	1.2	1.391	1.6	1.6	1.2	0.607	0.666	0.7	0.49
Calcium	18149.0	19982	20457	17200	11935	13727.0	14165.0	10900	40335	47181	48647.0	32300
Chromium	24.1	29.05	30.11	18.3	25.33	30.5	31.7	20.9	23.56	26	26.5	21.3
Cobalt	9.4	10.81	11.09	7.2	9.914	11.6	11.9	7.4	6.956	7.383	7.5	5.7
Copper	33.4	38.14	39.08	27	28.71	32.2	32.8	23	21.56	26.8	28.1	17.4
Iron	25894.0	29728	30471	19900	25127	28972.0	29724.0	19200	18157	19771	20056.0	15000
Lead	20.6	23.47	24.03	15.9	27.2	33.3	34.7	21.2	10.23	11.67	12.0	7.9
Magnesium	15540.0	19429	20331	11400	14894	18709.0	19583.0	10700	14987	16326	16562.0	12100
Manganese	821.0	1280	1432	576	893.8	1458.0	1656.0	659	801.5	1040	1100.0	642
Mercury	0.043	0.0499	0.0509	0.036	0.0437	0.05	0.1	0.039	0.0274	0.0311	0.0	0.026
Nickel	18.6	21.02	21.47	14.2	17.91	20.3	20.8	14.2	14.68	16.17	16.4	11.6
Potassium	1853.0	2135	2192	1510	1724	1969.0	2017.0	1340	970.3	1045	1057.0	788
Selenium	1.2	1.782	1.908	0.93	--	--	--	--	--	--	--	--
Sodium	578.2	647.4	669.6	552	606	732.8	769.9	555	--	--	--	--
Vanadium	20.6	22.6	22.96	16.5	18.19	19.8	20.0	15.1	13.23	14.44	14.7	10.5
Zinc	108.0	147.8	158.4	79.6	82.95	110.5	117.4	59.9	47.19	51.34	52.1	41.3

-- - insufficient amount of data to calculate statistic due to non-detect values

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APPENDIX R

Background Soil Maps

1. Comparison of Aluminum Concentrations in Surface Soil to Background Statistics
2. Comparison of Arsenic Concentrations in Surface Soil to Background Statistics
3. Comparison of Barium Concentrations in Surface Soil to Background Statistics
4. Comparison of Beryllium Concentrations in Surface Soil to Background Statistics
5. Comparison of Calcium Concentrations in Surface Soil to Background Statistics
6. Comparison of Chromium Concentrations in Surface Soil to Background Statistics
7. Comparison of Cobalt Concentrations in Surface Soil to Background Statistics
8. Comparison of Copper Concentrations in Surface Soil to Background Statistics
9. Comparison of Iron Concentrations in Surface Soil to Background Statistics
10. Comparison of Lead Concentrations in Surface Soil to Background Statistics
11. Comparison of Magnesium Concentrations in Surface Soil to Background Statistics
12. Comparison of Manganese Concentrations in Surface Soil to Background Statistics
13. Comparison of Mercury Concentrations in Surface Soil to Background Statistics

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14. Comparison of Nickel Concentrations in Surface Soil to Background Statistics
15. Comparison of Potassium Concentrations in Surface Soil to Background Statistics
16. Comparison of Selenium Concentrations in Surface Soil to Background Statistics
17. Comparison of Sodium Concentrations in Surface Soil to Background Statistics
18. Comparison of Vanadium Concentrations in Surface Soil to Background Statistics
19. Comparison of Zinc Concentrations in Surface Soil to Background Statistics
20. Comparison of Aluminum Concentrations in Shallow Soil to Background Statistics
21. Comparison of Arsenic Concentrations in Shallow Soil to Background Statistics
22. Comparison of Barium Concentrations in Shallow Soil to Background Statistics
23. Comparison of Beryllium Concentrations in Shallow Soil to Background Statistics
24. Comparison of Calcium Concentrations in Shallow Soil to Background Statistics
25. Comparison of Chromium Concentrations in Shallow Soil to Background Statistics
26. Comparison of Cobalt Concentrations in Shallow Soil to Background Statistics
27. Comparison of Copper Concentrations in Shallow Soil to Background Statistics
28. Comparison of Iron Concentrations in Shallow Soil to Background Statistics

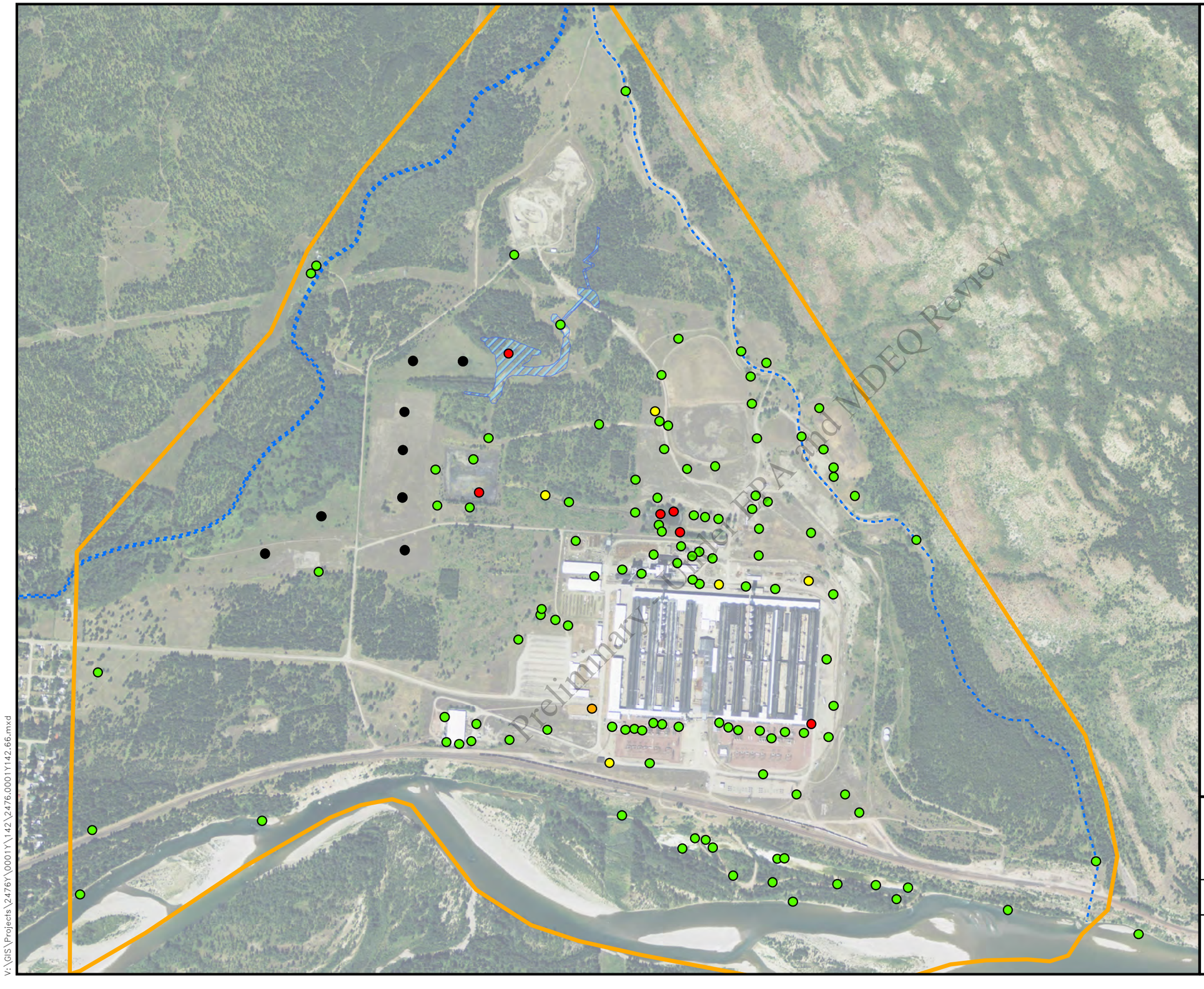
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29. Comparison of Lead Concentrations in Shallow Soil to Background Statistics
30. Comparison of Magnesium Concentrations in Shallow Soil to Background Statistics
31. Comparison of Manganese Concentrations in Shallow Soil to Background Statistics
32. Comparison of Mercury Concentrations in Shallow Soil to Background Statistics
33. Comparison of Nickel Concentrations in Shallow Soil to Background Statistics
34. Comparison of Potassium Concentrations in Shallow Soil to Background Statistics
35. Comparison of Sodium Concentrations in Shallow Soil to Background Statistics
36. Comparison of Vanadium Concentrations in Shallow Soil to Background Statistics
37. Comparison of Zinc Concentrations in Shallow Soil to Background Statistics
38. Comparison of Aluminum Concentrations in Intermediate Depth Soil to Background Statistics
39. Comparison of Arsenic Concentrations in Intermediate Depth Soil to Background Statistics
40. Comparison of Barium Concentrations in Intermediate Depth Soil to Background Statistics
41. Comparison of Beryllium Concentrations in Intermediate Depth Soil to Background Statistics
42. Comparison of Calcium Concentrations in Intermediate Depth Soil to Background Statistics
43. Comparison of Chromium Concentrations in Intermediate Depth Soil to Background Statistics

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44. Comparison of Cobalt Concentrations in Intermediate Depth Soil to Background Statistics
45. Comparison of Copper Concentrations in Intermediate Depth Soil to Background Statistics
46. Comparison of Iron Concentrations in Intermediate Depth Soil to Background Statistics
47. Comparison of Lead Concentrations in Intermediate Depth Soil to Background Statistics
48. Comparison of Magnesium Concentrations in Intermediate Depth Soil to Background Statistics
49. Comparison of Manganese Concentrations in Intermediate Depth Soil to Background Statistics
50. Comparison of Mercury Concentrations in Intermediate Depth Soil to Background Statistics
51. Comparison of Nickel Concentrations in Intermediate Depth Soil to Background Statistics
52. Comparison of Potassium Concentrations in Intermediate Depth Soil to Background Statistics
53. Comparison of Vanadium Concentrations in Intermediate Depth Soil to Background Statistics
54. Comparison of Zinc Concentrations in Intermediate Depth Soil to Background Statistics

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Title:

COMPARISON OF ALUMINUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS

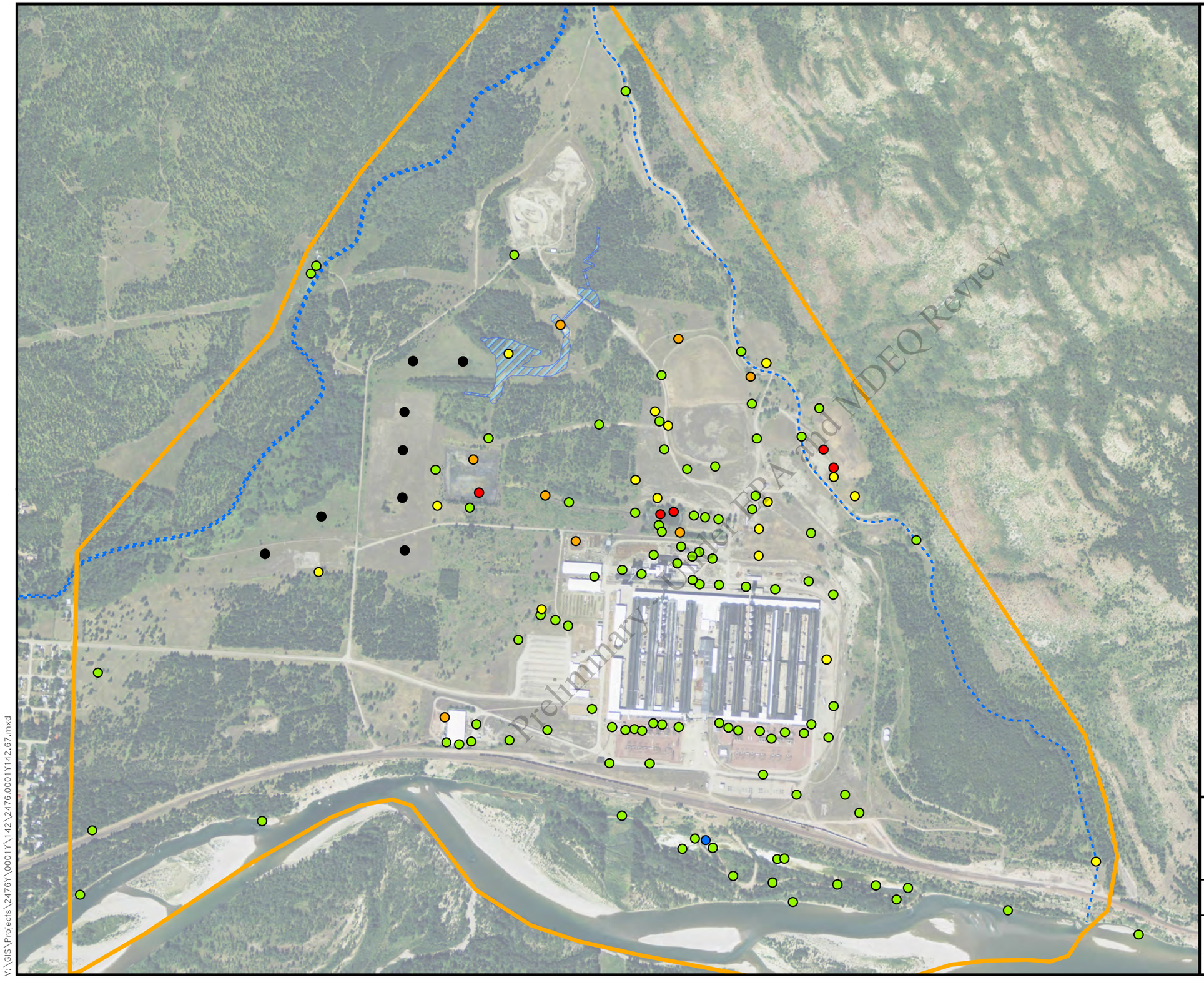
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R1
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Title:
COMPARISON OF ARSENIC CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

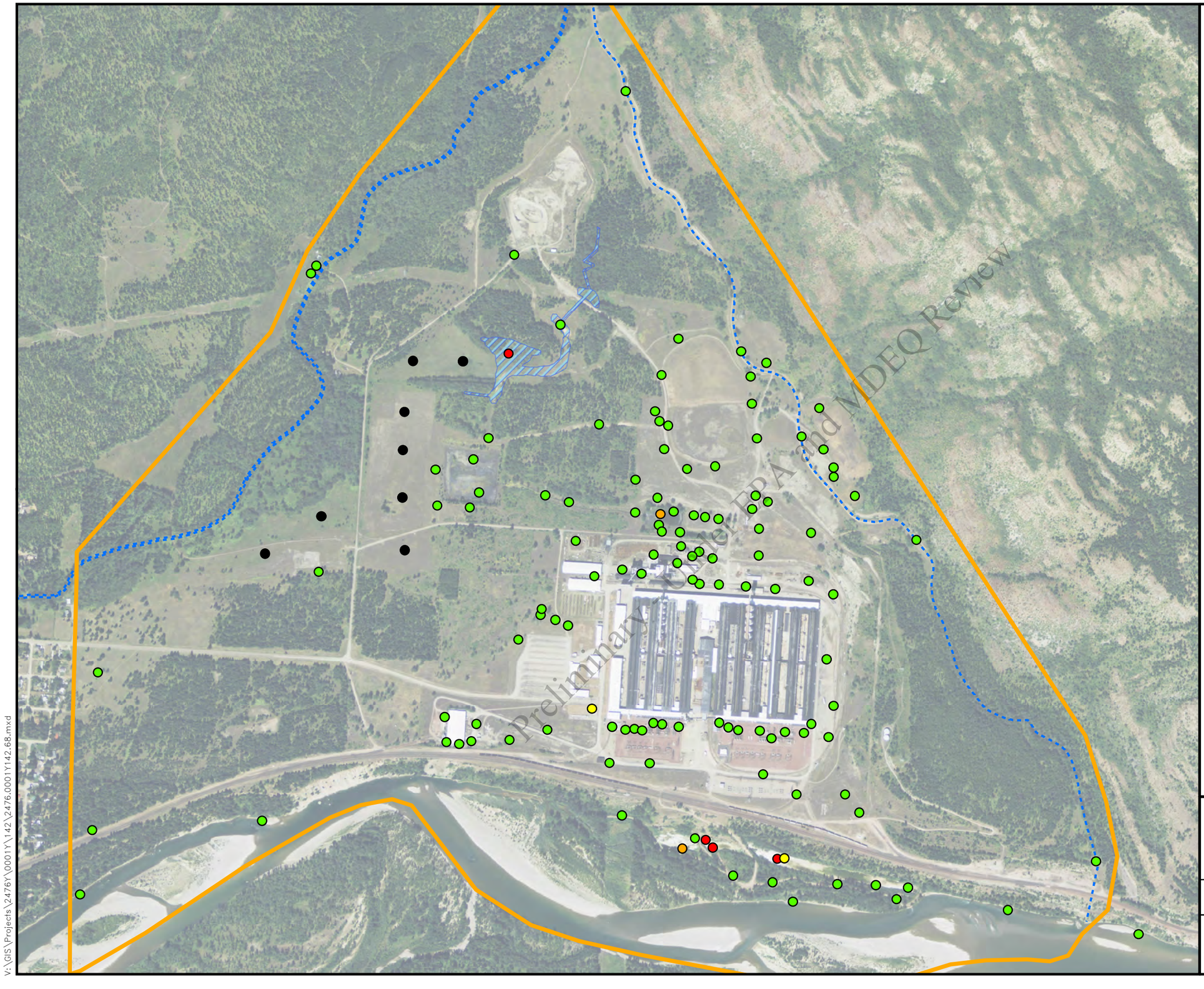
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.67.mxd	

FIGURE
R2

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Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (364.5)
- Above Highest Background Surface Soil Concentration (429)
- Above UTL (588.7)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

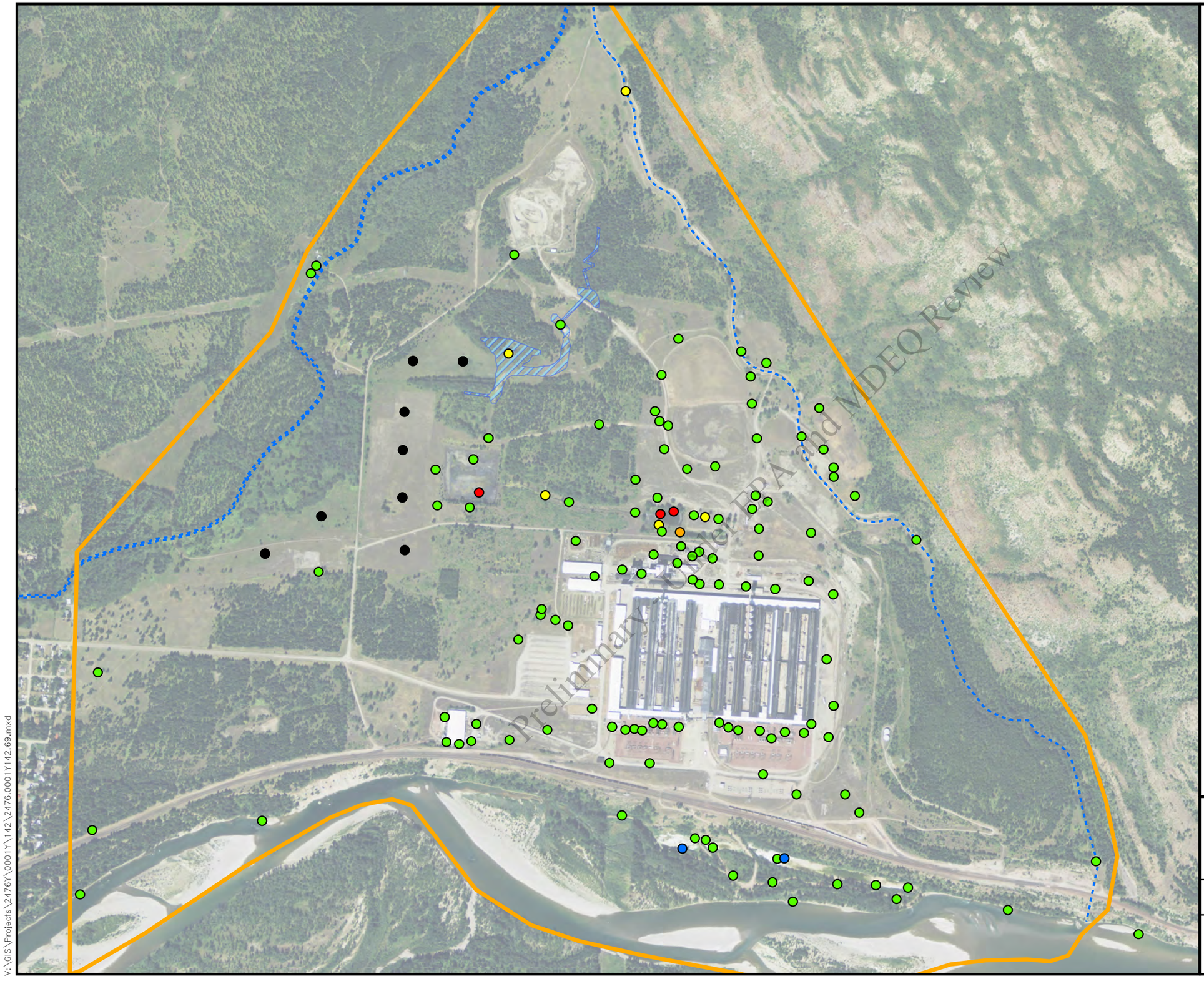
Title:
COMPARISON OF BARIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R3
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.68.mxd		

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Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (0.989)
- Above Highest Background Surface Soil Concentration (1.2)
- Above UTL (1.486)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

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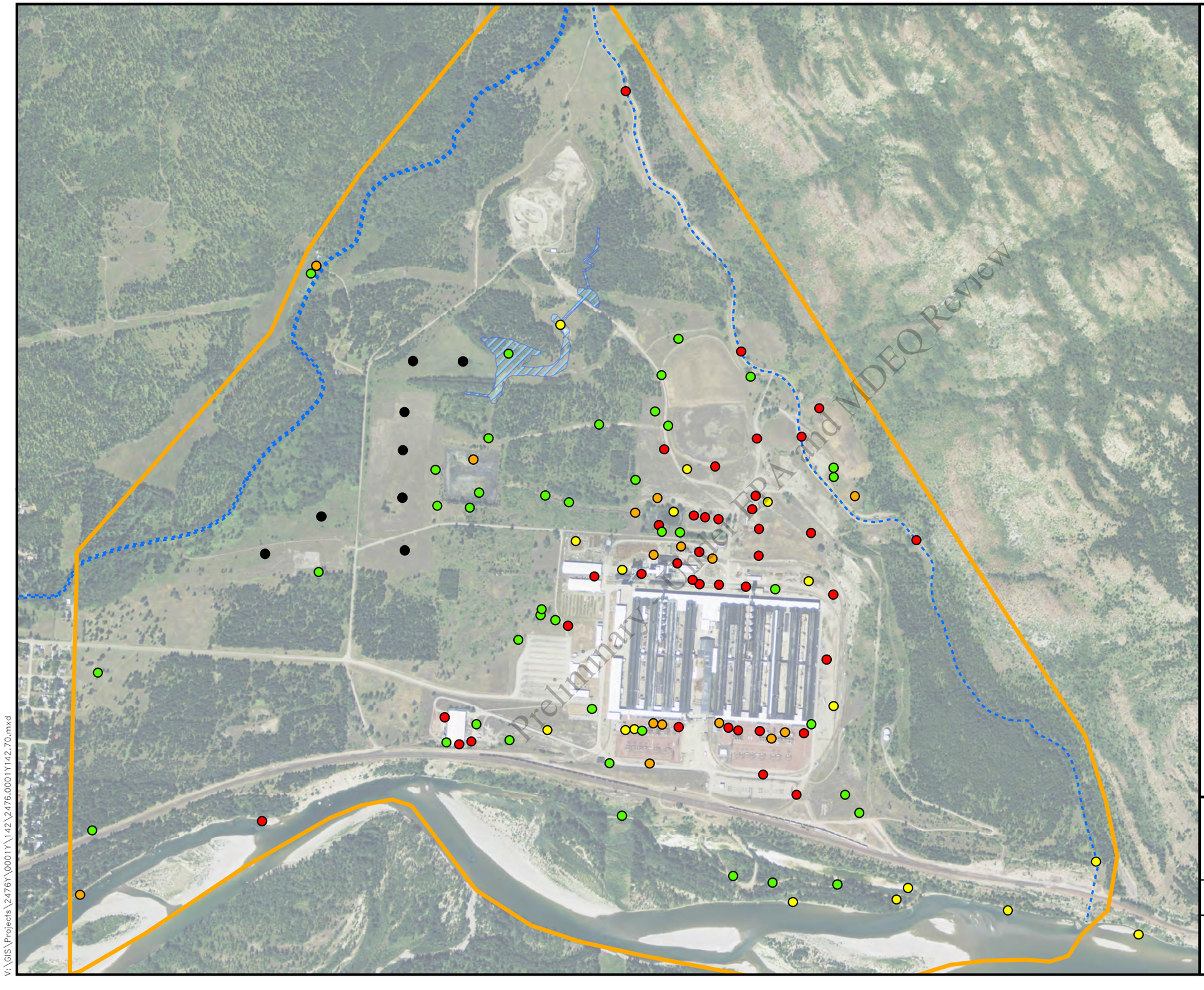
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COMPARISON OF BERYLLIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R4
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.69.mxd		

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N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (10949)
- Above Highest Background Surface Soil Concentration (17200)
- Above UTL (20457)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

Title:
COMPARISON OF CALCIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

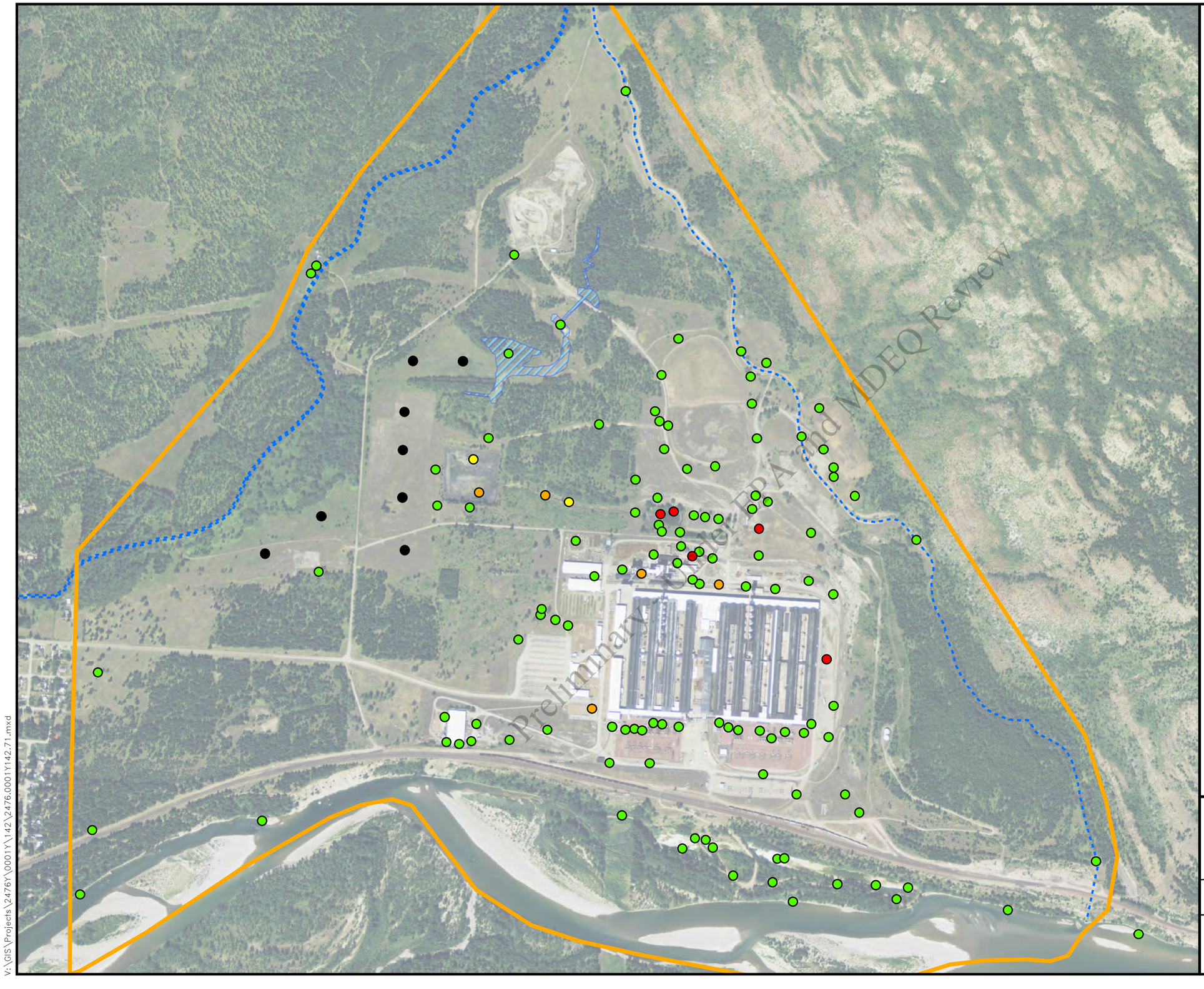
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R5
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.70.mxd		

EPA and MDEQ Review
Preliminary - Under Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.70.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (16.05)
- Above Highest Background Surface Soil Concentration (18.3)
- Above UTL (30.11)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

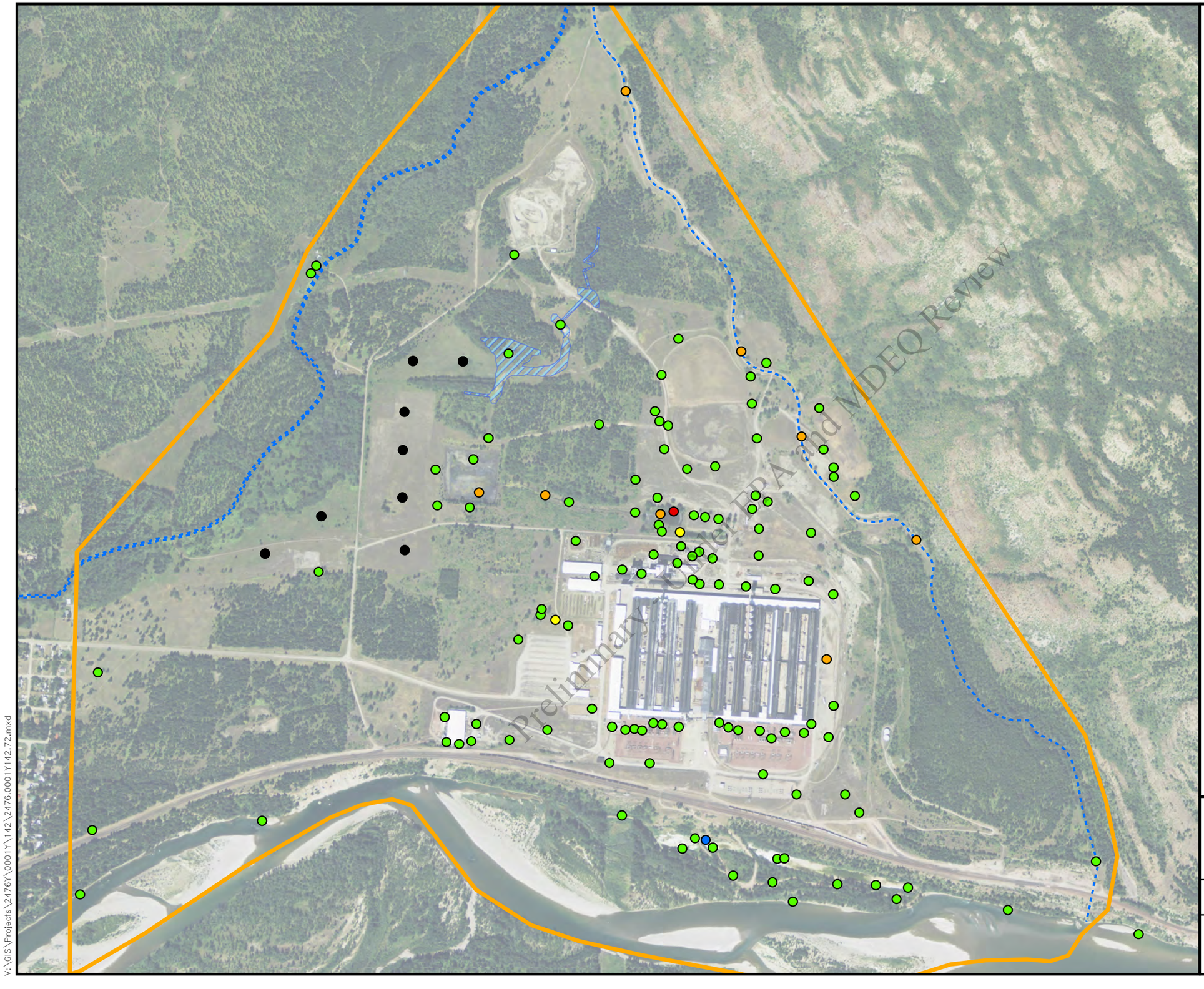
Title:
COMPARISON OF CHROMIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R6
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.71.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.71.mxd



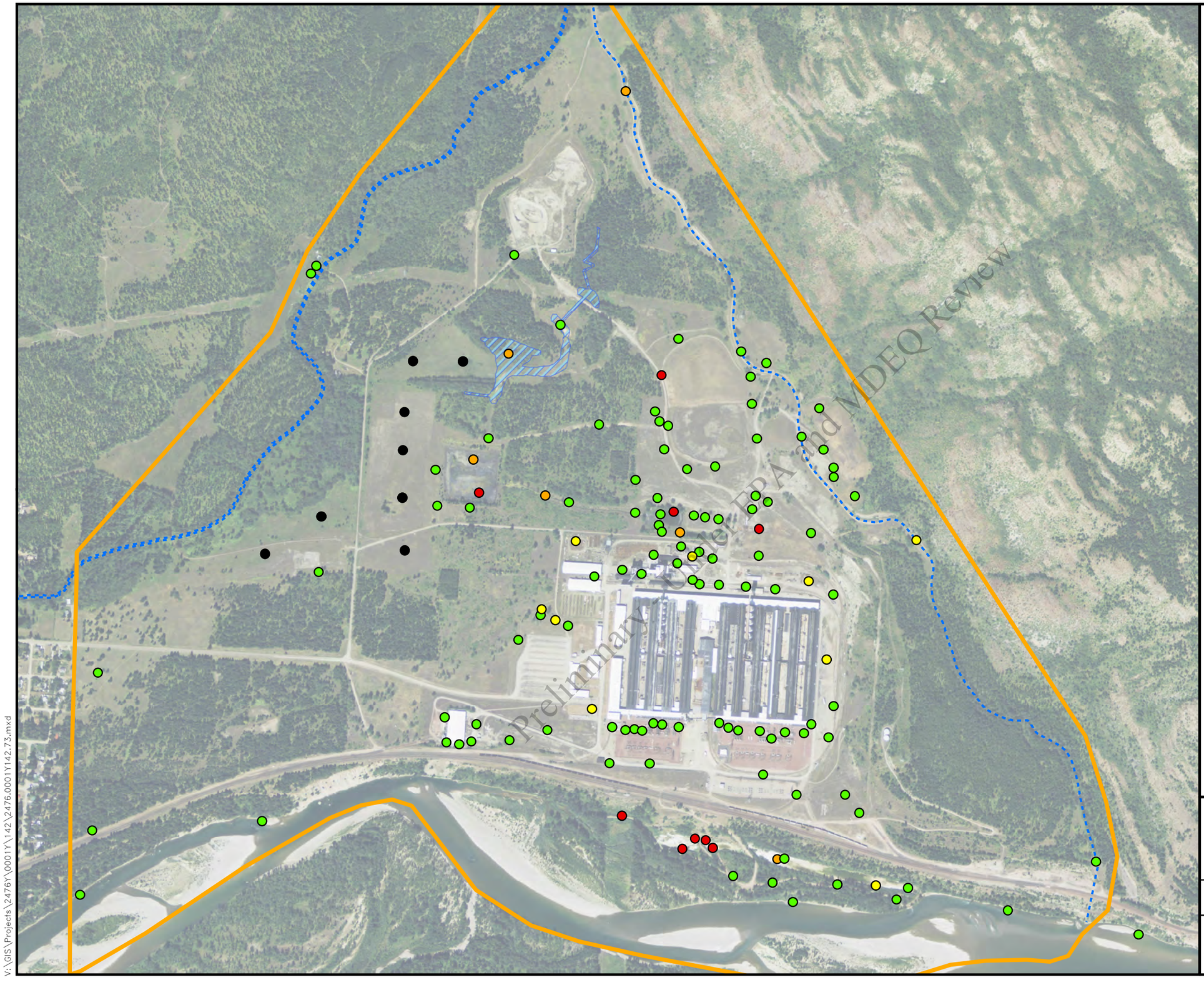
Title:
COMPARISON OF COBALT CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R7
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.72.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.72.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (21.92)
- Above Highest Background Surface Soil Concentration (27)
- Above UTL (39.08)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

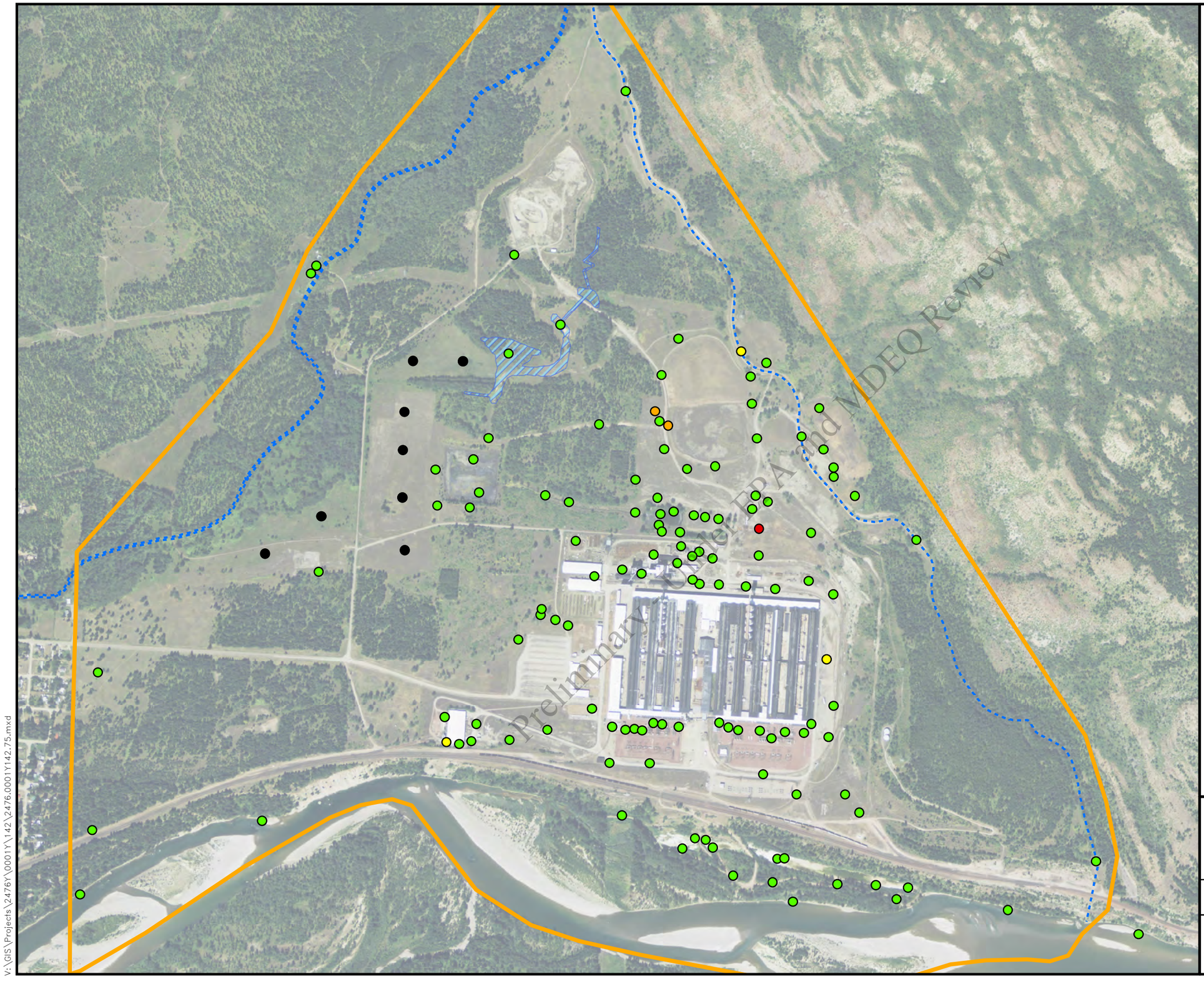
Title:
COMPARISON OF COPPER CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R8
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.73.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.73.mxd



Title:

COMPARISON OF IRON CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS

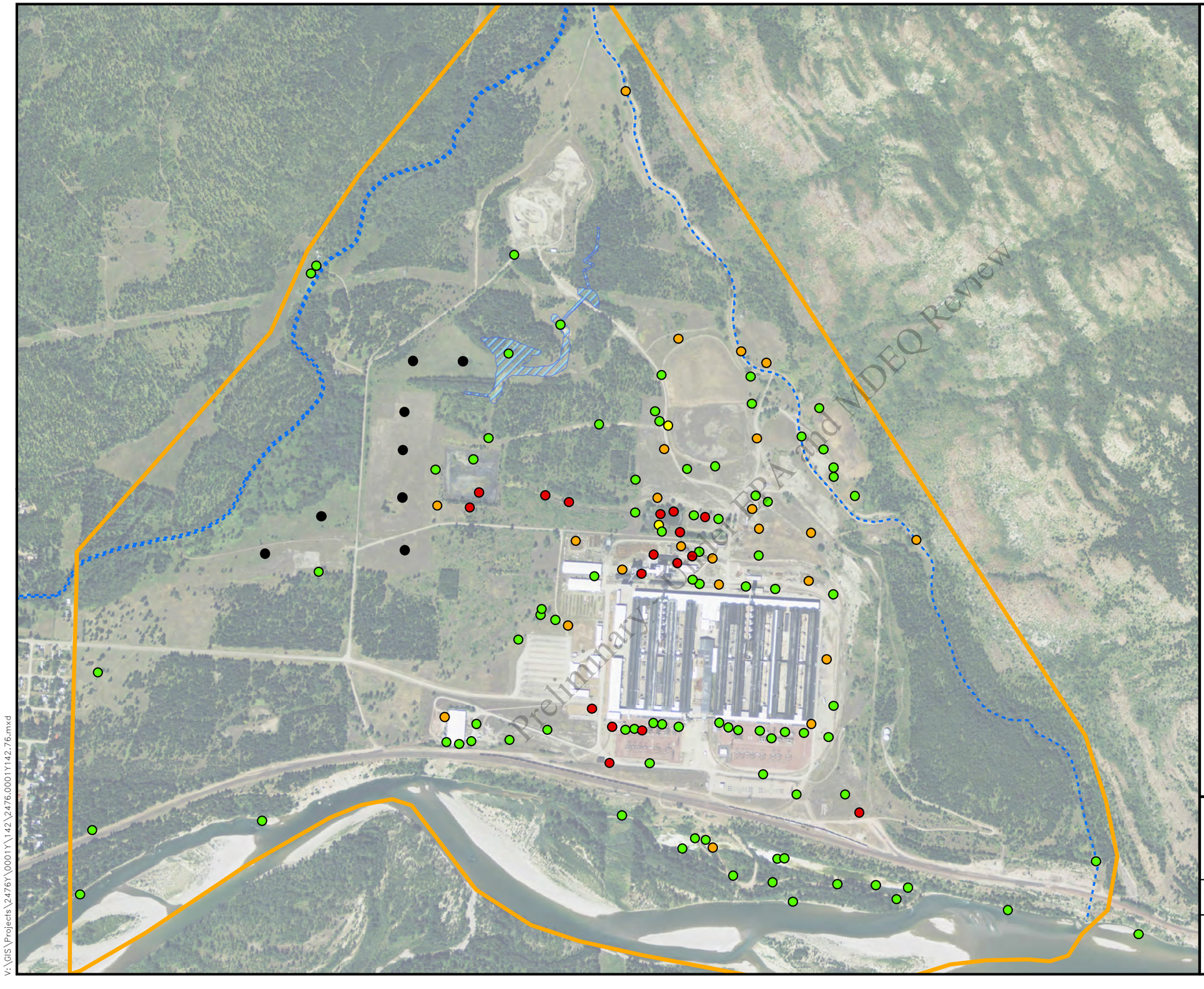
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R9
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.75.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.75.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (14.82)
- Above Highest Background Surface Soil Concentration (15.9)
- Above UTL (24.03)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

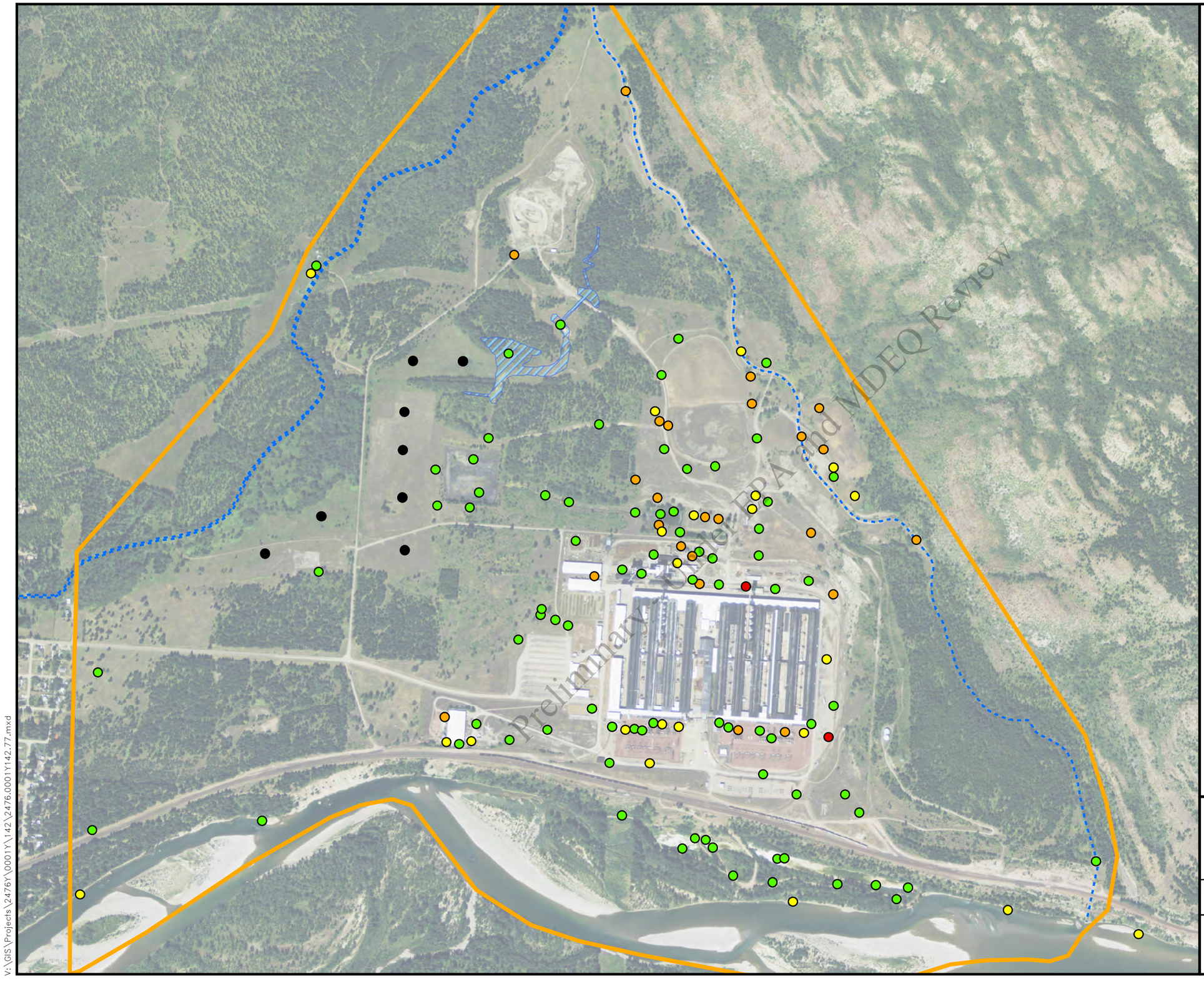
Title:
COMPARISON OF LEAD CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R10
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.76.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.76.mxd



Preliminary - Under EPA and MDEQ Review

N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (10293)
- Above Highest Background Surface Soil Concentration (11400)
- Above UTL (20331)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

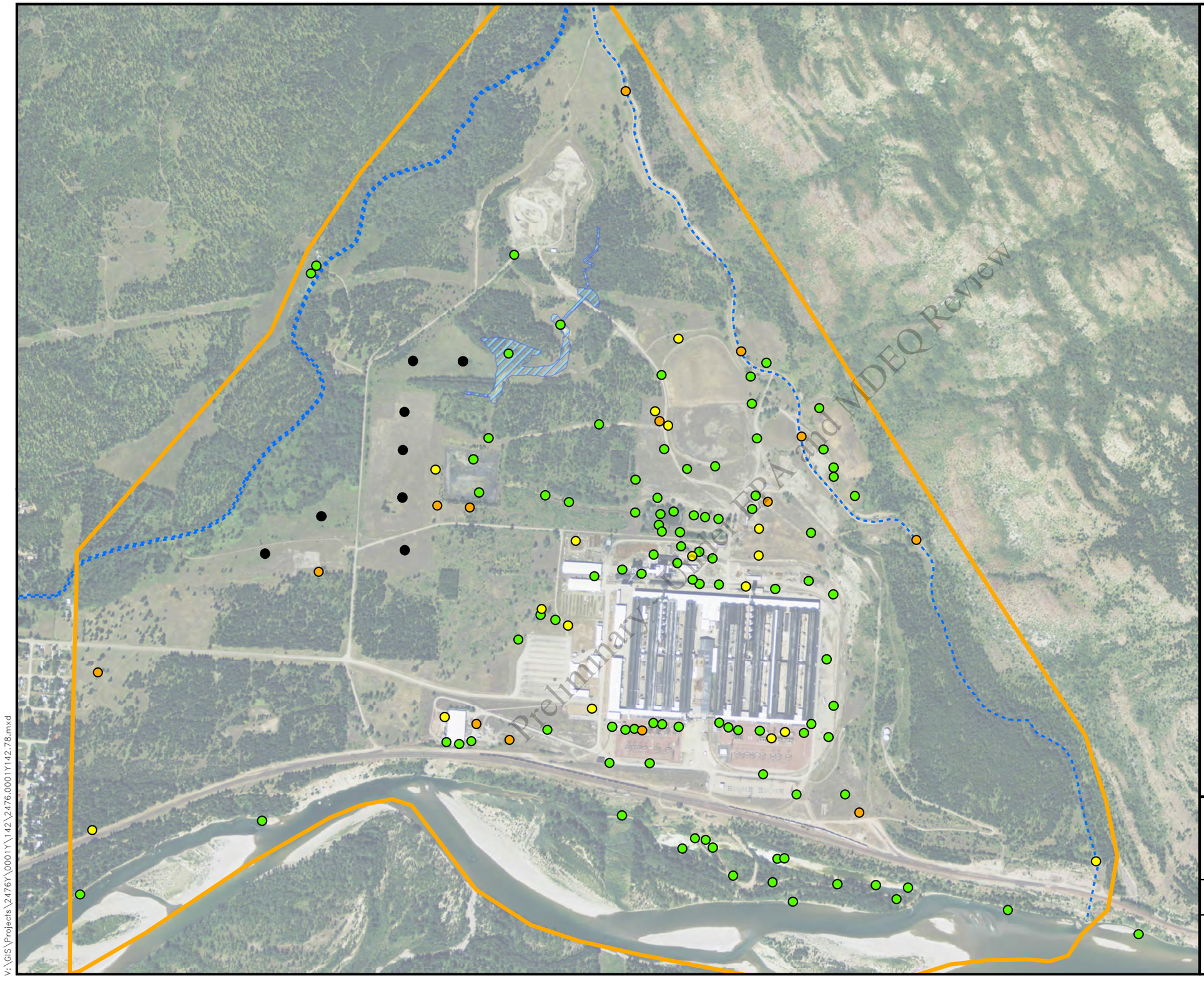
Title:
COMPARISON OF MAGNESIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R11
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.77.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.77.mxd



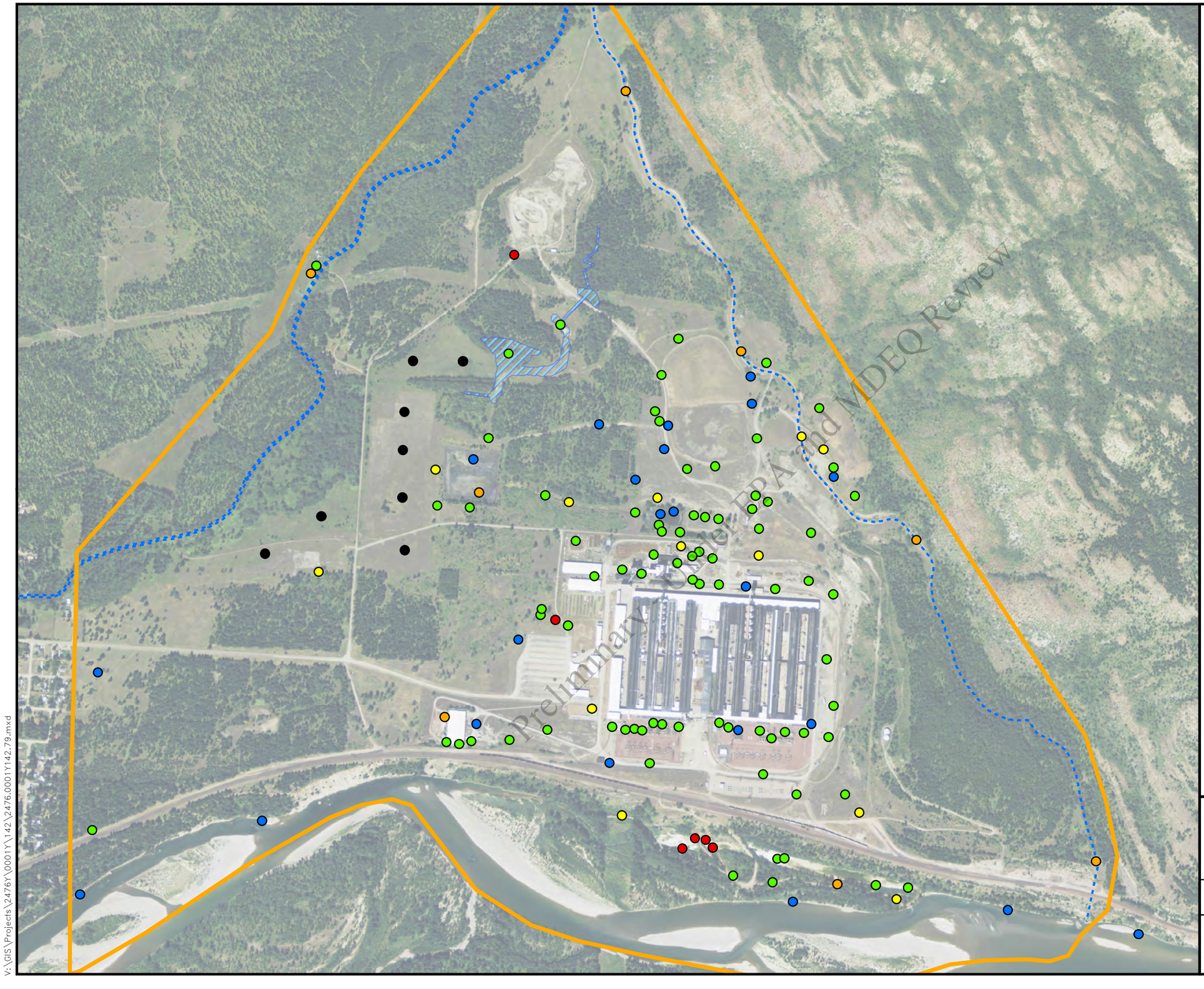
Title:
COMPARISON OF MANGANEESE CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R12
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.78.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.78.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (0.0284)
- Above Highest Background Surface Soil Concentration (0.036)
- Above UTL (0.0509)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

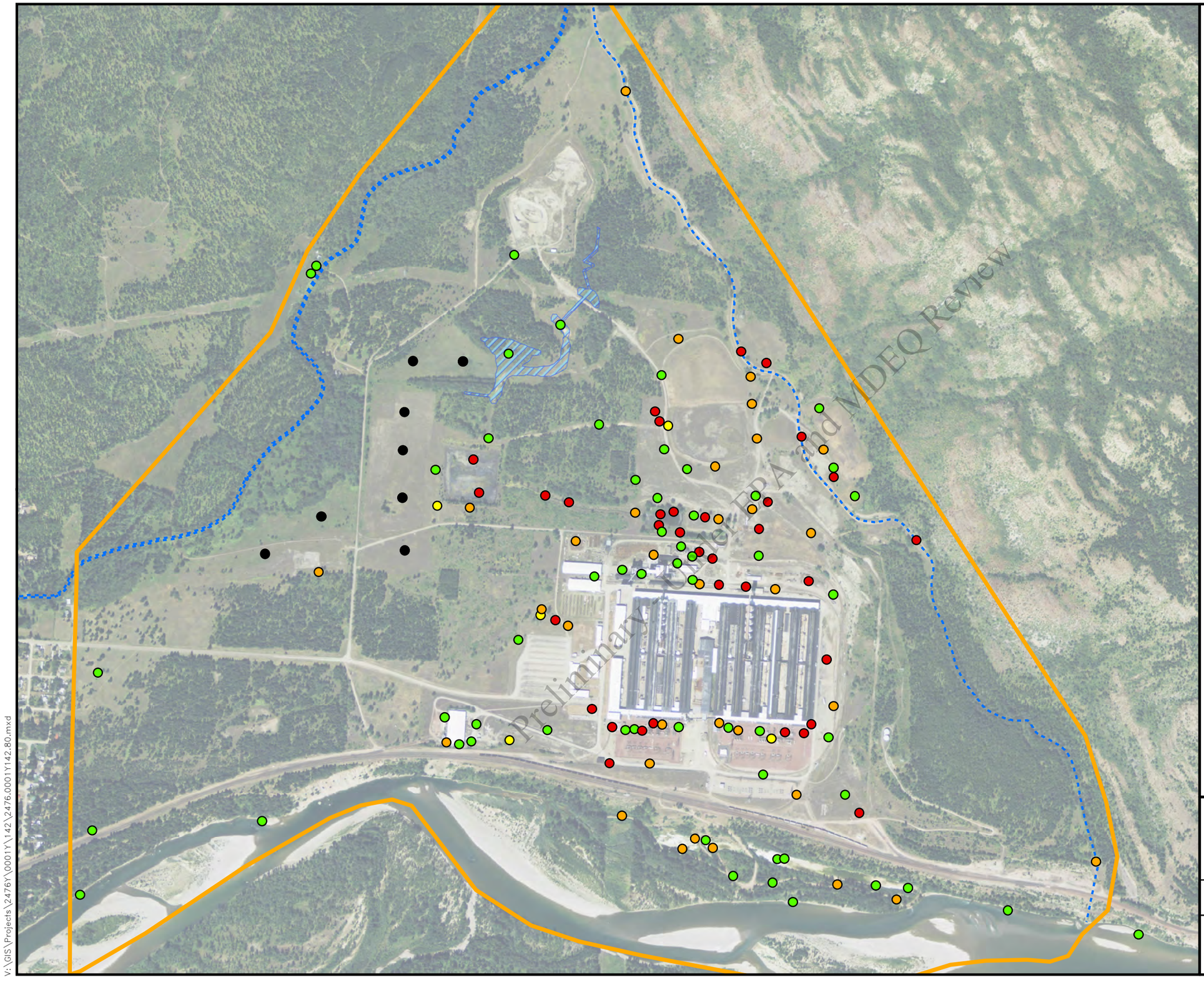
Title:
COMPARISON OF MERCURY CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R13
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.79.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.79.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (13.85)
- Above Highest Background Surface Soil Concentration (14.20)
- Above UTL (21.47)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

Title:

COMPARISON OF NICKEL CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

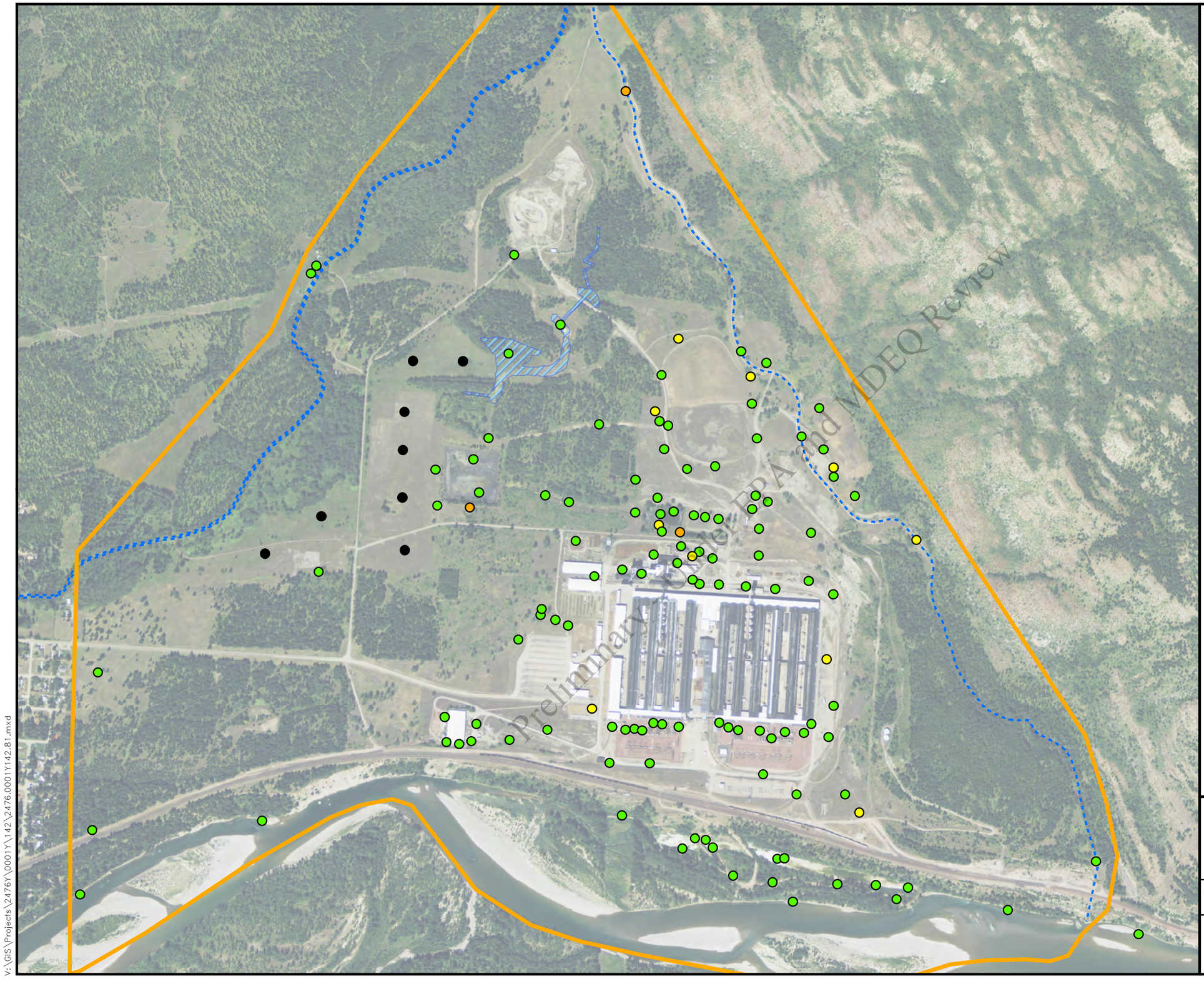
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R14
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.80.mxd		

Preliminary - Under EPA and MDEQ Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.80.mxd



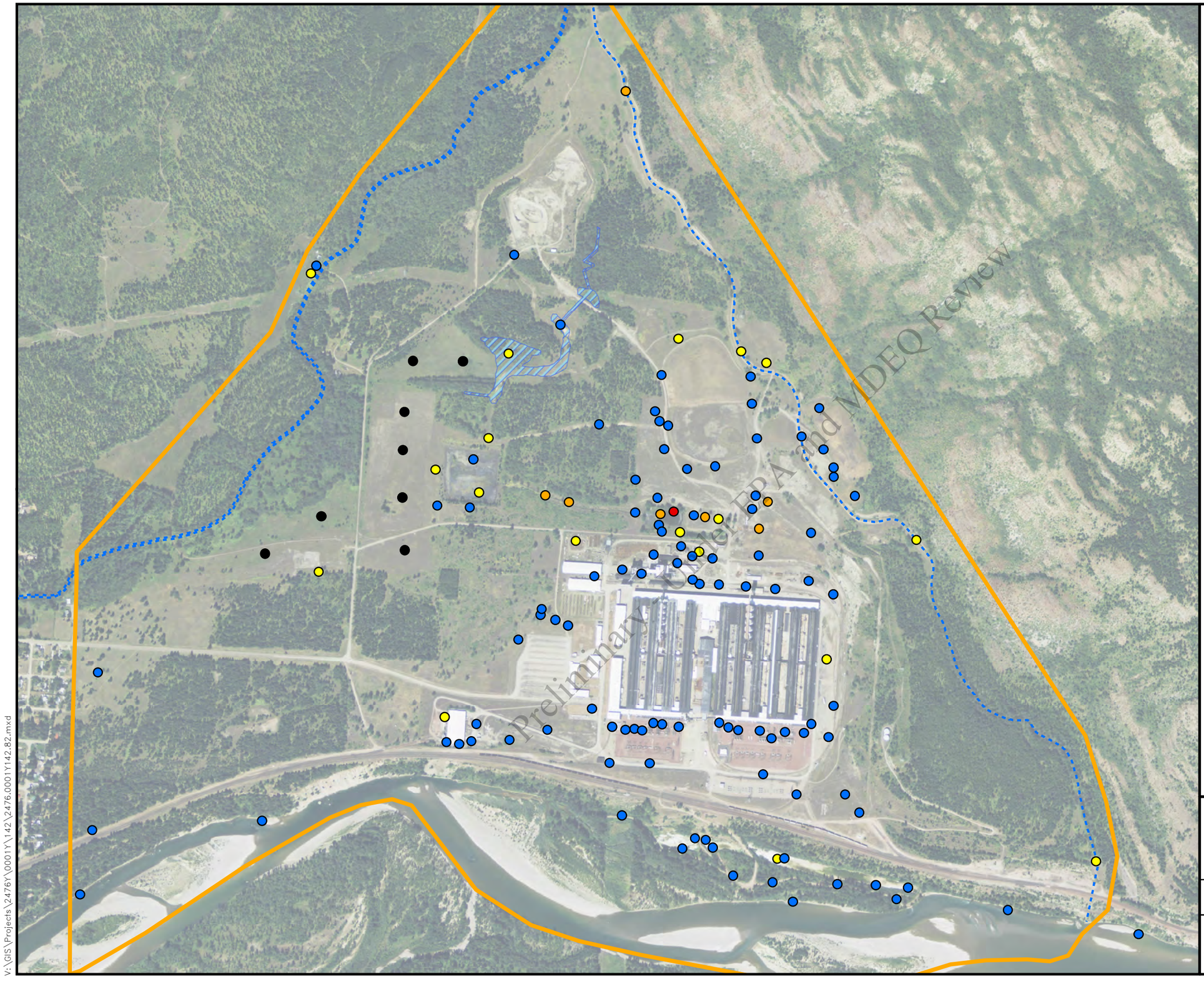
Title:
COMPARISON OF POTASSIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R15
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.81.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.81.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (0.735)
- Above Highest Background Surface Soil Concentration (0.93)
- Above UTL (1.908)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

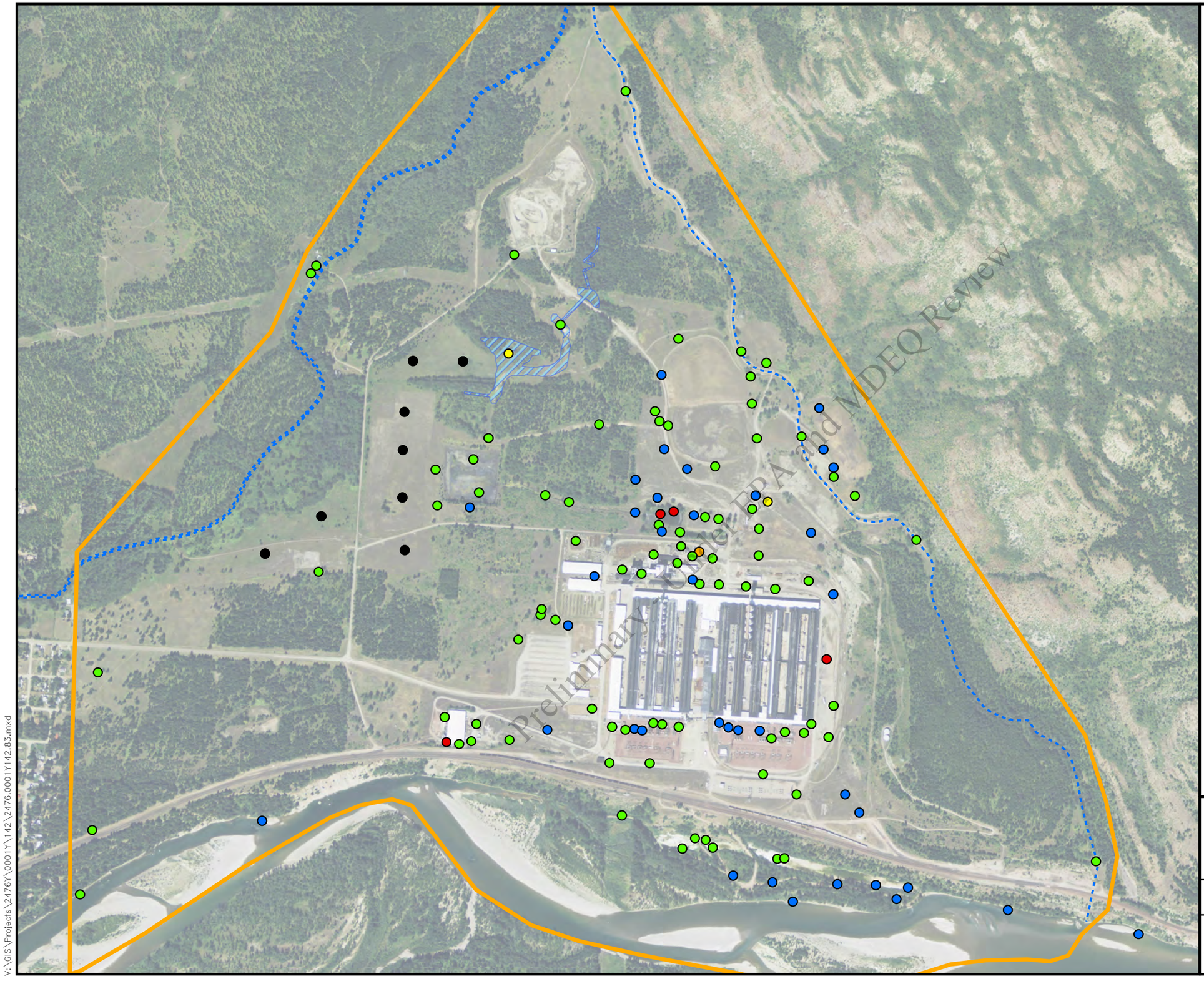
Title:
COMPARISON OF SELENIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R16
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.82.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.82.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (337.1)
- Above Highest Background Surface Soil Concentration (552)
- Above UTL (578.2)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

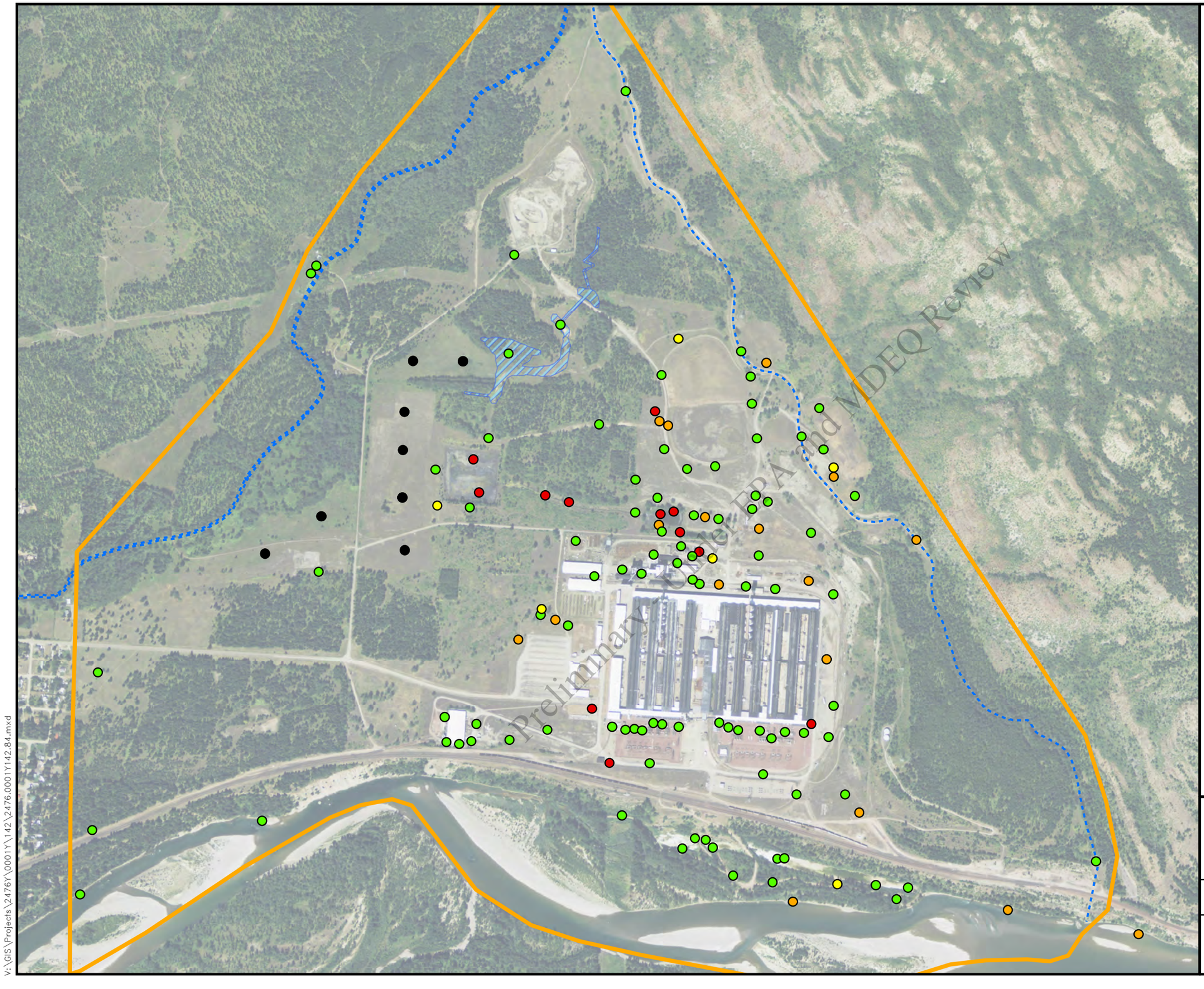
Title:
COMPARISON OF SODIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R17
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.83.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.83.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (15.04)
- Above Highest Background Surface Soil Concentration (16.5)
- Above UTL (22.96)
- Background Soil Sample Locations

Notes

All surface soil samples were collected from a 0 – 0.5 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

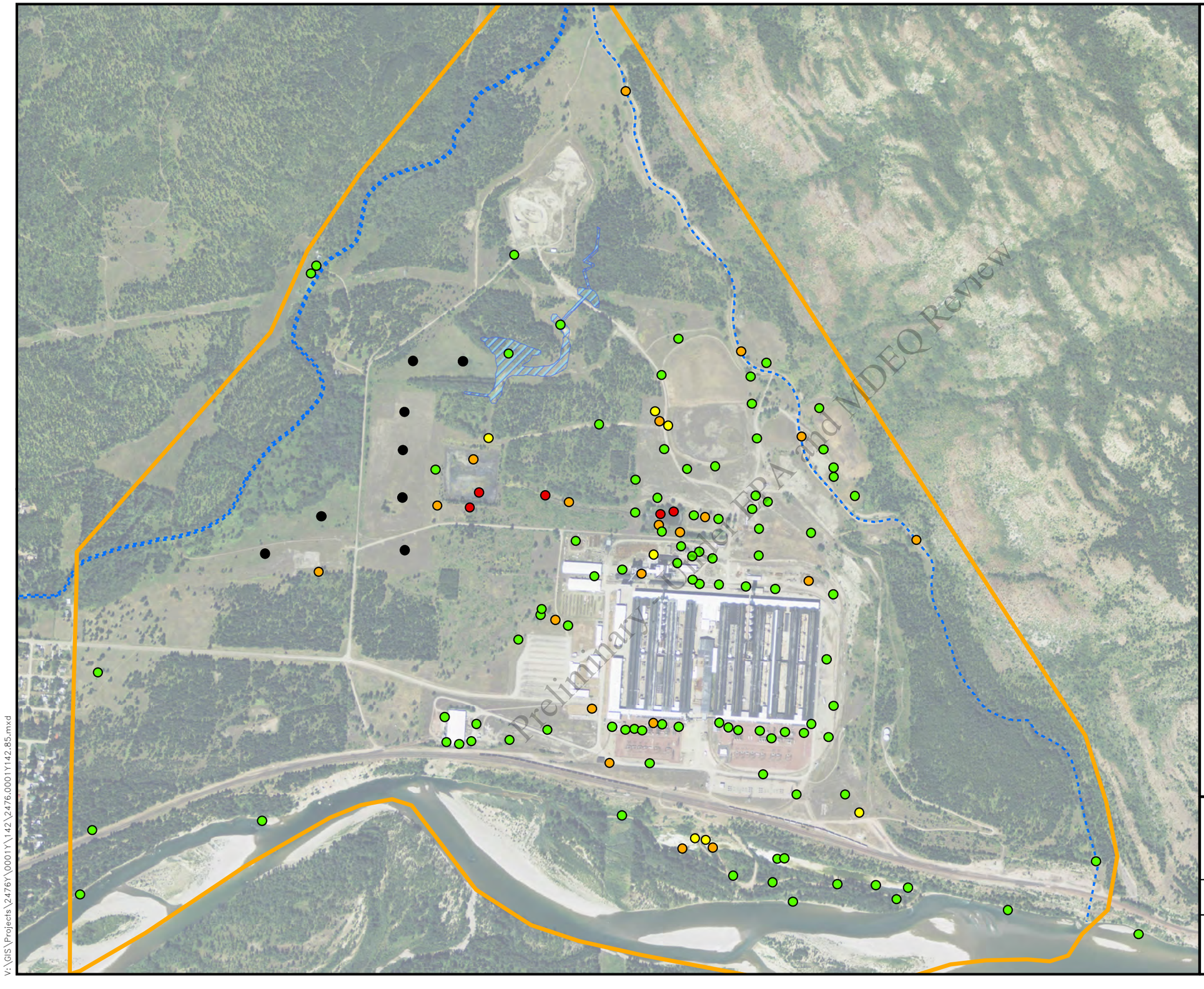
Title:
COMPARISON OF VANADIUM CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R18
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.84.mxd		

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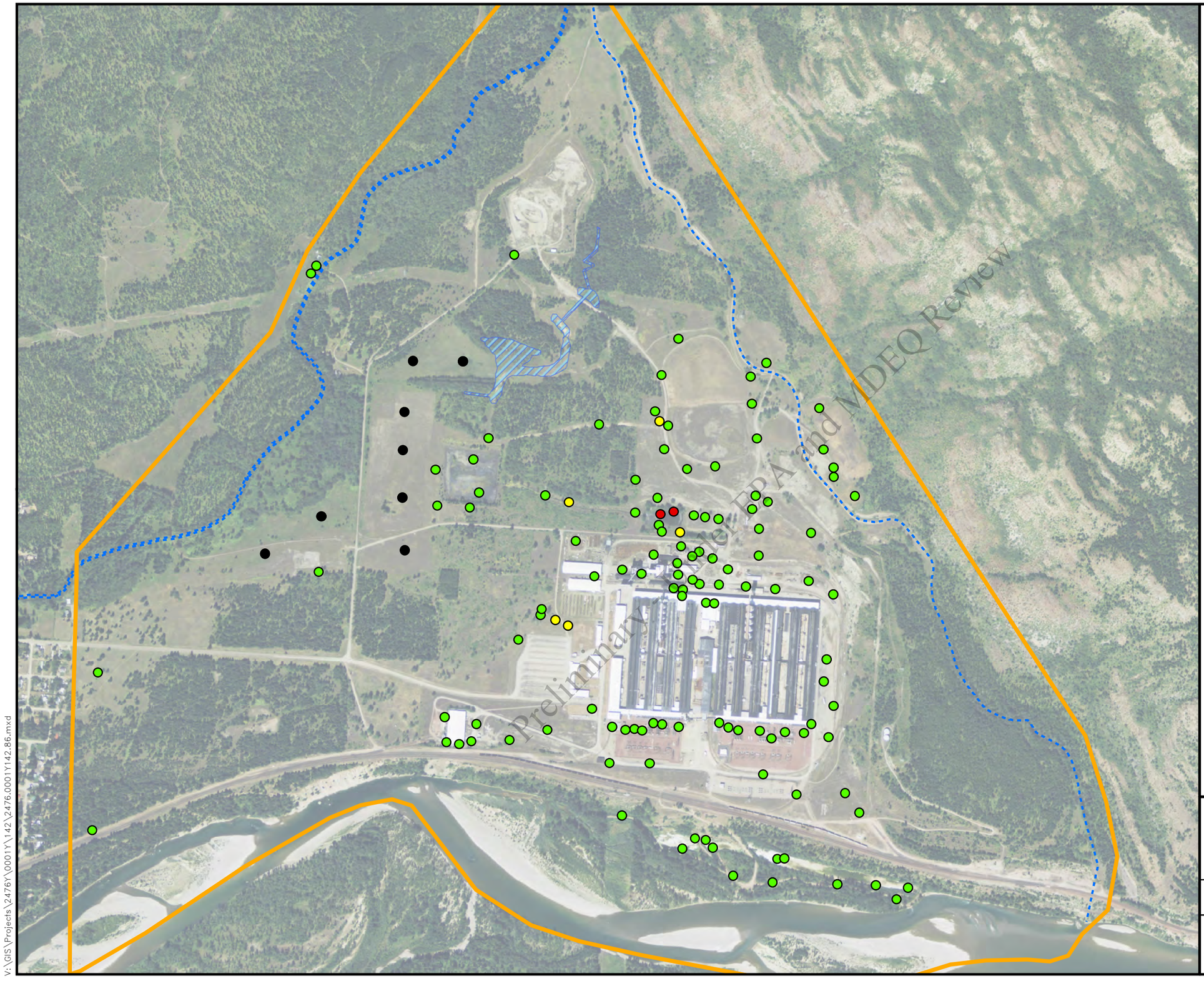
Title:
COMPARISON OF ZINC CONCENTRATIONS IN SURFACE SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R19
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.85.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.85.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (22307)
- Above Highest Background Shallow Soil Concentration (30900)
- Above UTL (35085)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF ALUMINUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

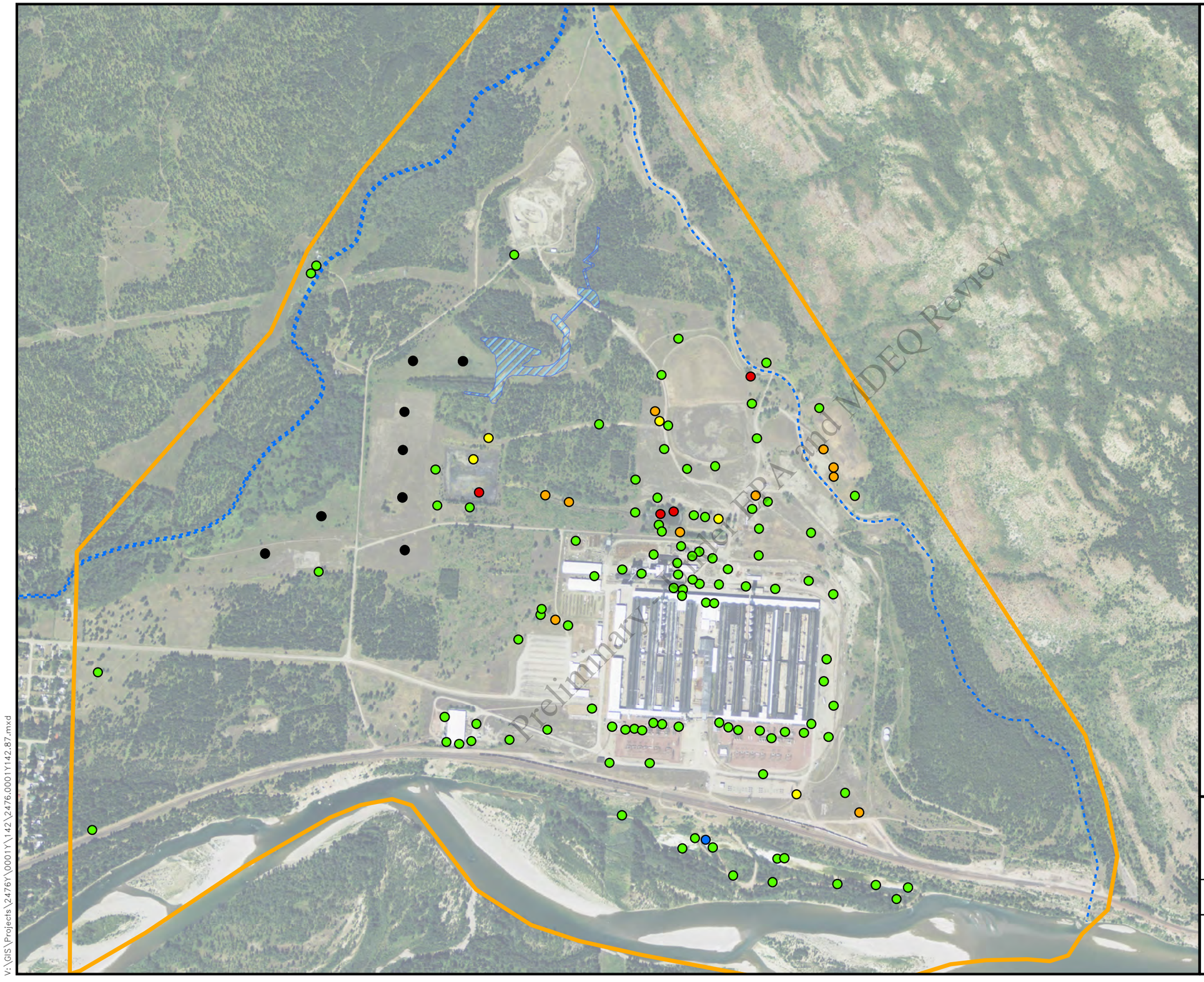
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R20
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.86.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.86.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (5.952)
- Above Highest Background Shallow Soil Concentration (6.80)
- Above UTL (10.42)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

Title:

COMPARISON OF ARSENIC CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

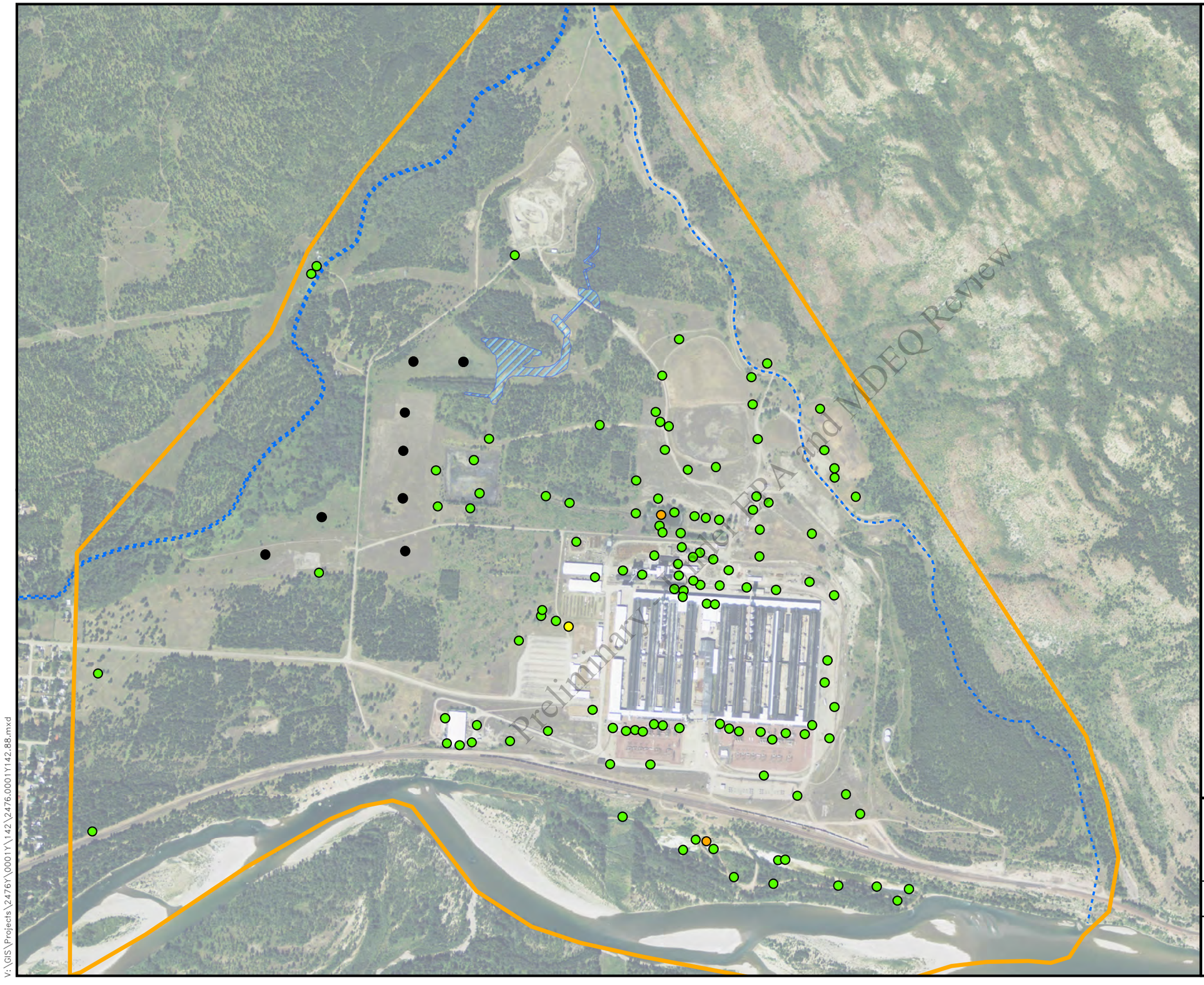
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R21
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.87.mxd		

EPA and MDEQ Review
Preliminary - Under Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.87.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (323.9)
- Above Highest Background Shallow Soil Concentration (440)
- Above UTL (625.2)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

Title:

COMPARISON OF BARIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

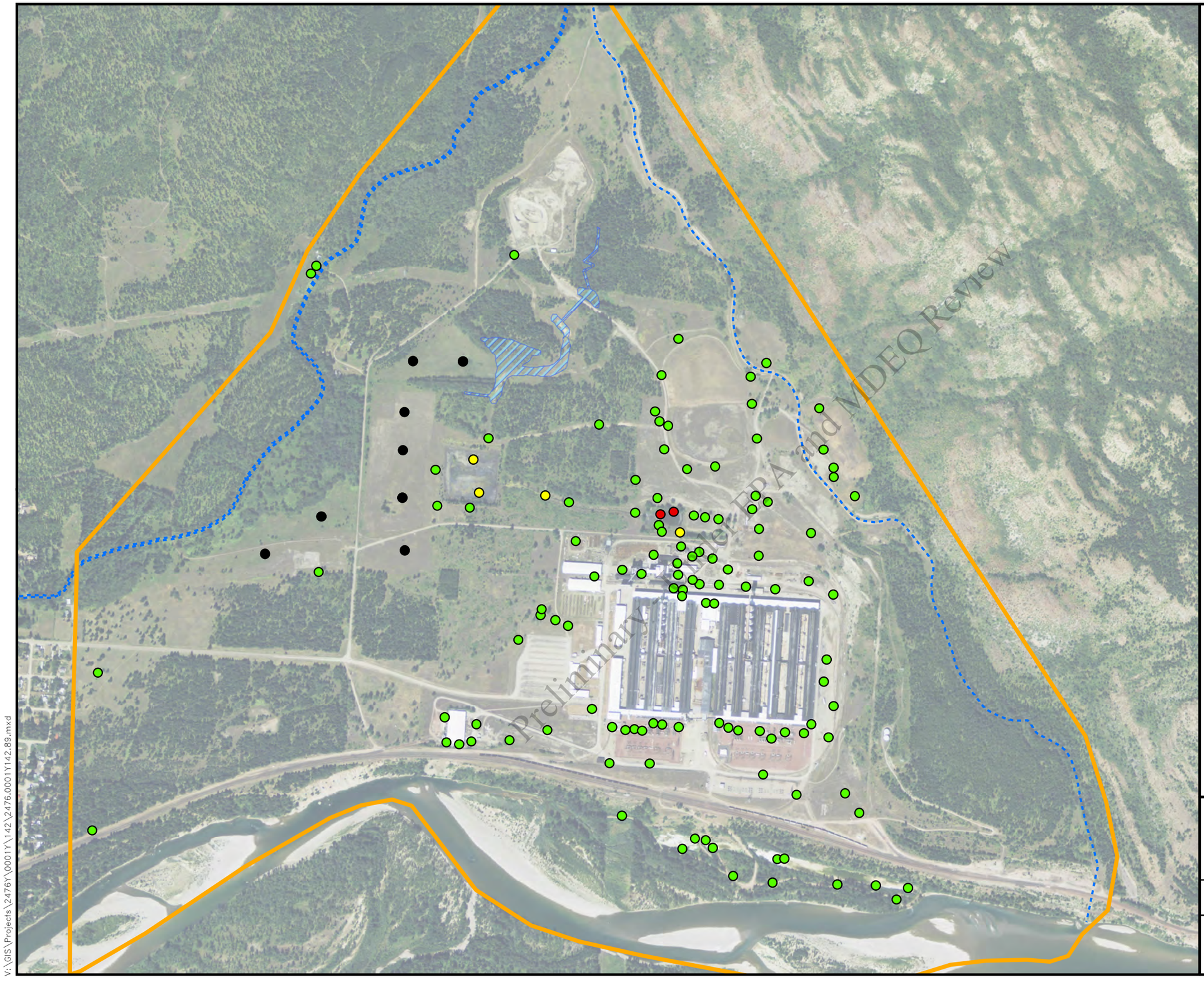
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R22
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.88.mxd		

EPA and MDEQ Review
Preliminary - Under Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.88.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (0.883)
- Above Highest Background Shallow Soil Concentration (1.2)
- Above UTL (1.627)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF BERYLLIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

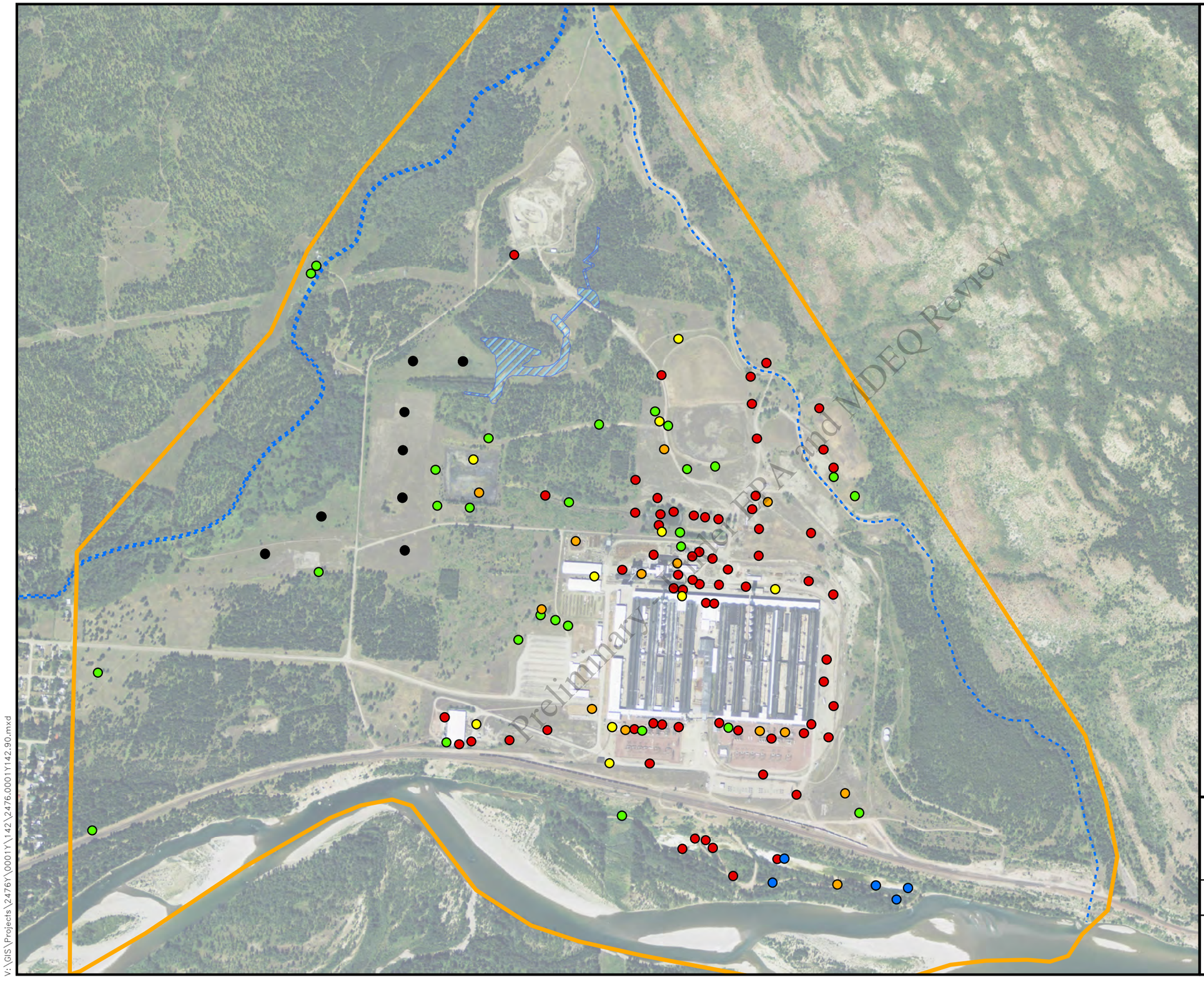
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R23
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.89.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.89.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (6377)
- Above Highest Background Shallow Soil Concentration (10900)
- Above UTL (14165)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

Title:

COMPARISON OF CALCIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

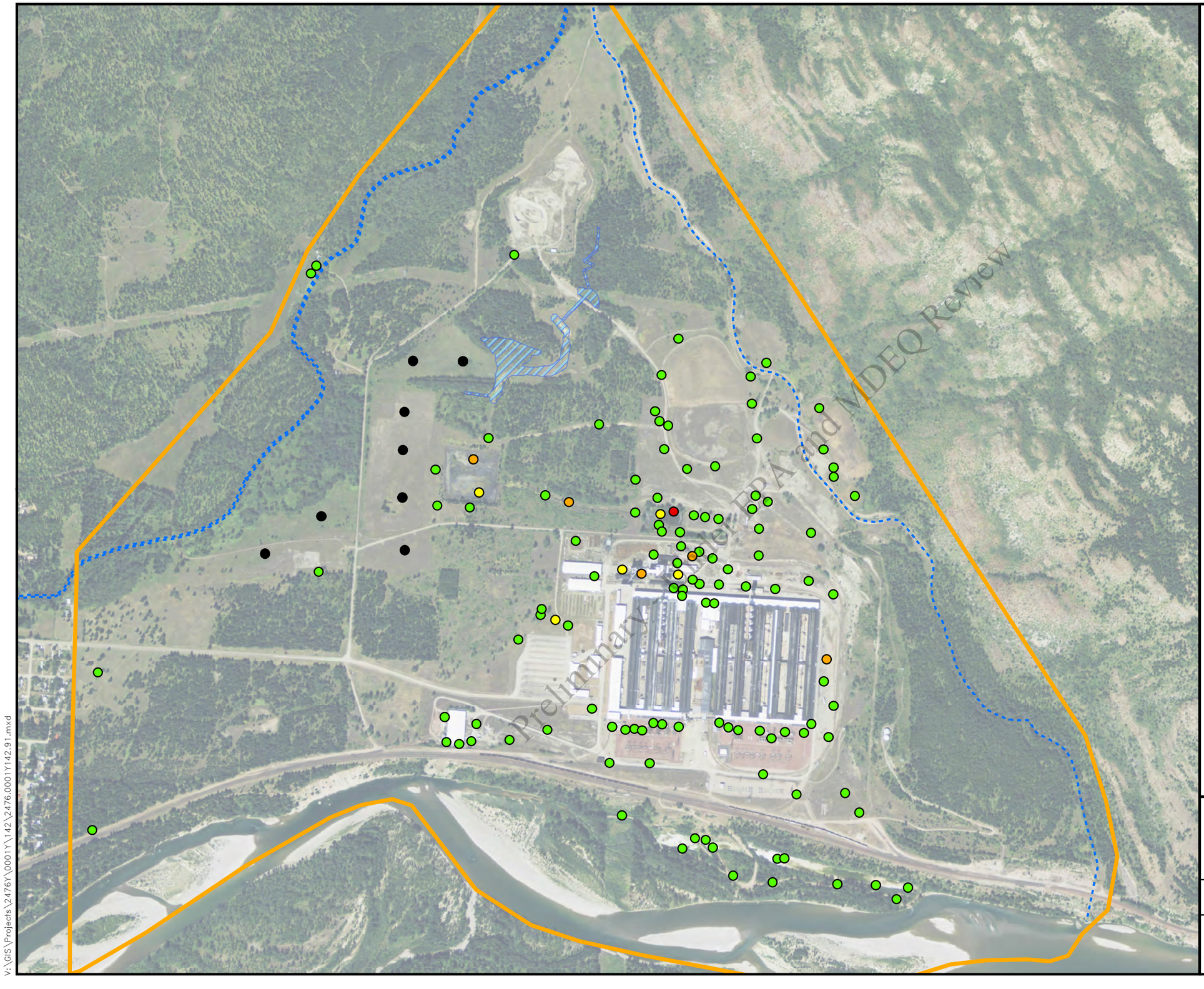
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**R24**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.90.mxd		

EPA and MDEQ Review
Preliminary - Under Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.90.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (16.12)
- Above Highest Background Shallow Soil Concentration (20.9)
- Above UTL (31.73)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF CHROMIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

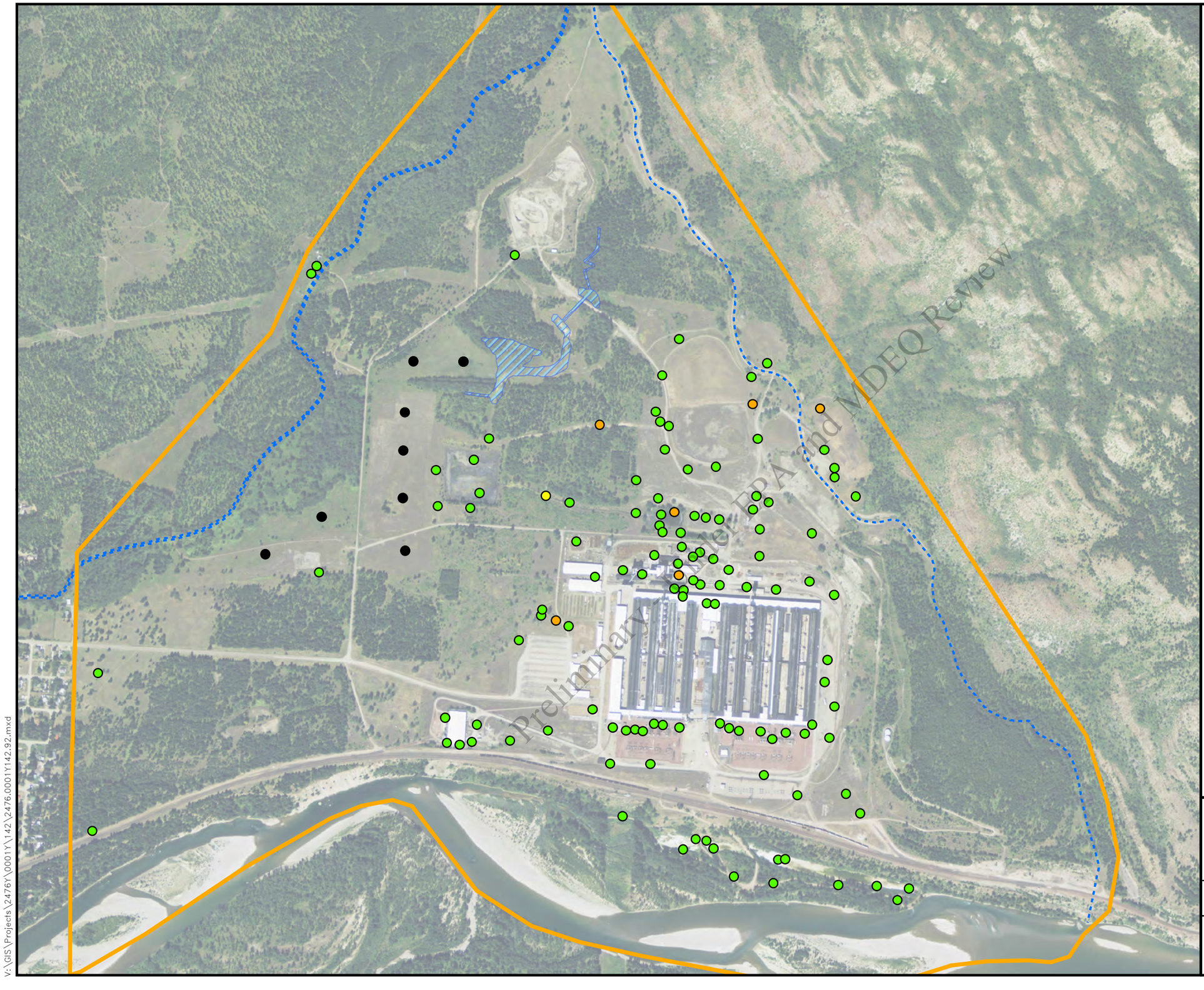
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R25
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.91.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.91.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (7.071)
- Above Highest Background Shallow Soil Concentration (7.4)
- Above UTL (11.91)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF COBALT CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.92.mxd	

FIGURE **R26**

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.92.mxd

N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (19.2)
- Above Highest Background Shallow Soil Concentration (23)
- Above UTL (32.84)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

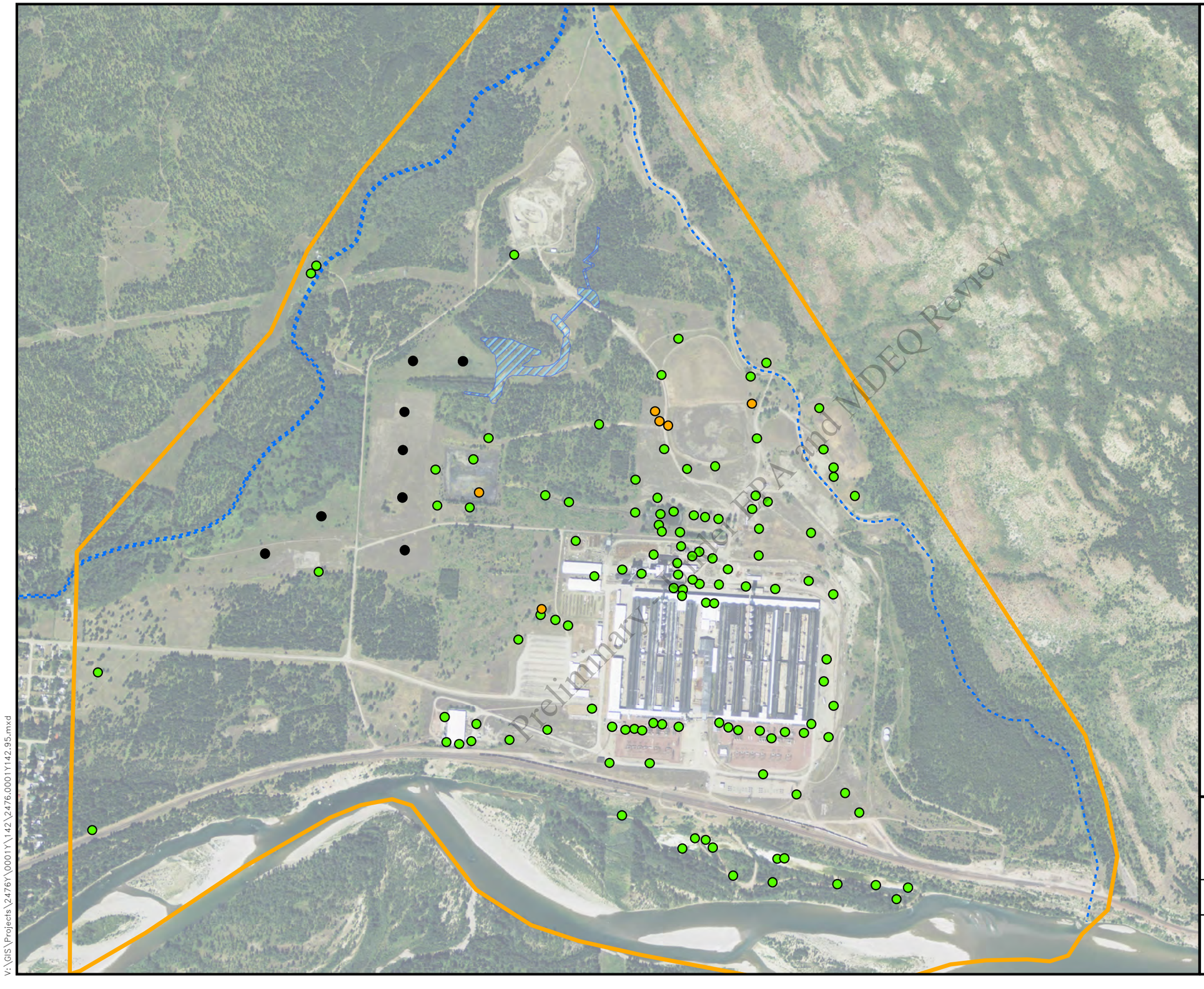
Title:
COMPARISON OF COPPER CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R27
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.93.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.93.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (18295)
- Above Highest Background Shallow Soil Concentration (19200)
- Above UTL (29724)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

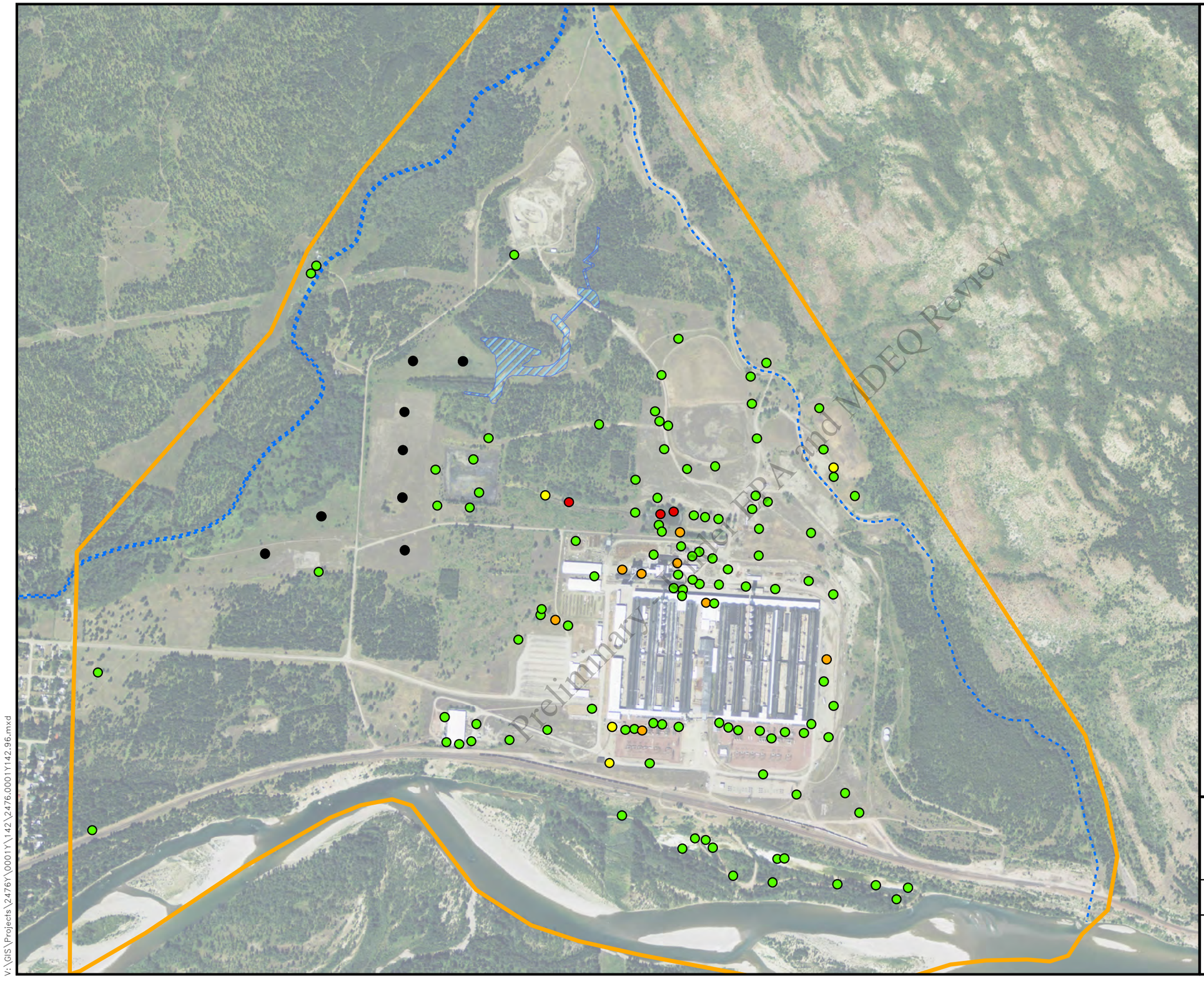
Title:
COMPARISON OF IRON CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R28
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.95.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.95.mxd



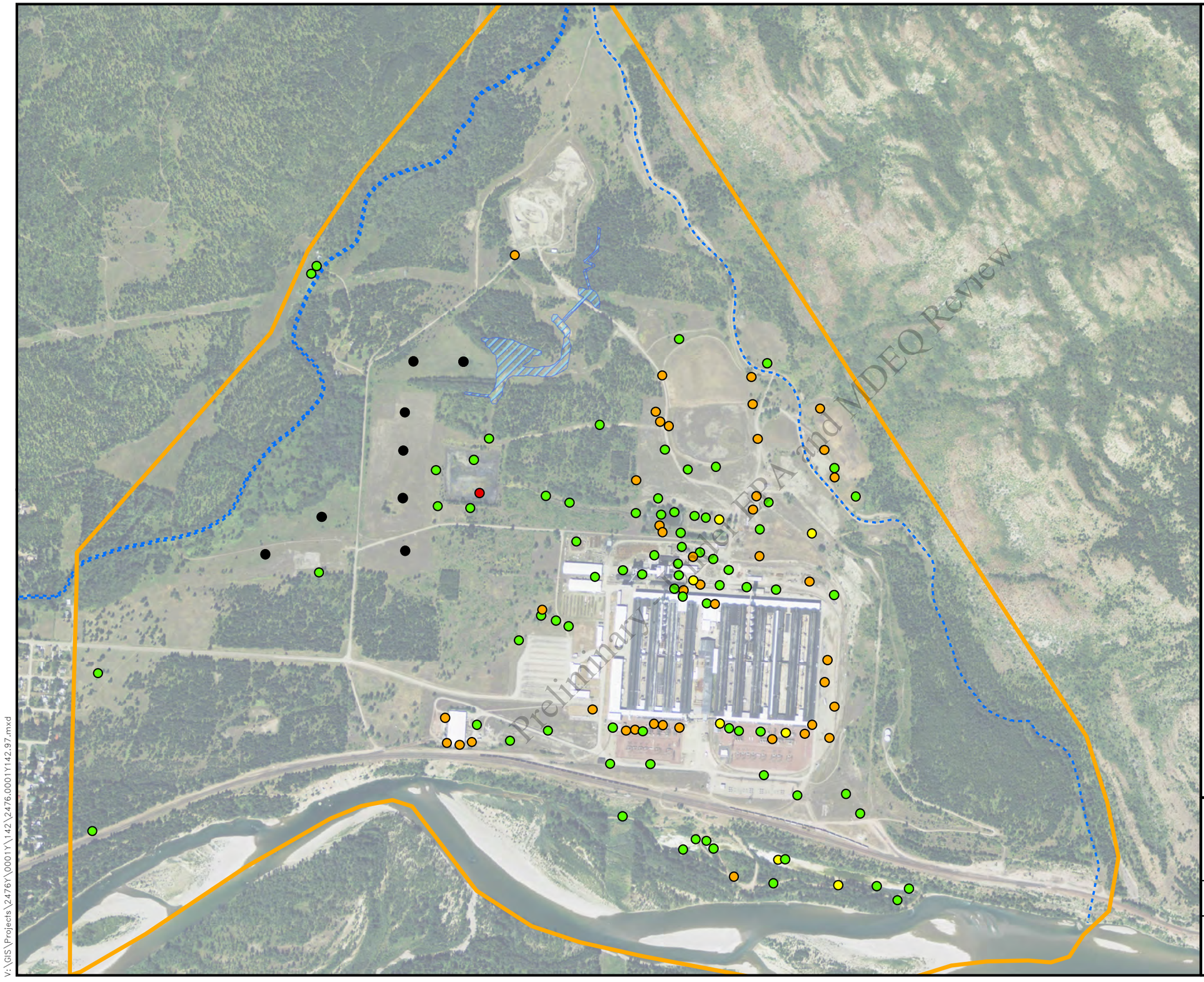
Title:
COMPARISON OF LEAD CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R29
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.96.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.96.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (10104)
- Above Highest Background Shallow Soil Concentration (10700)
- Above UTL (19583)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF MAGNESIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

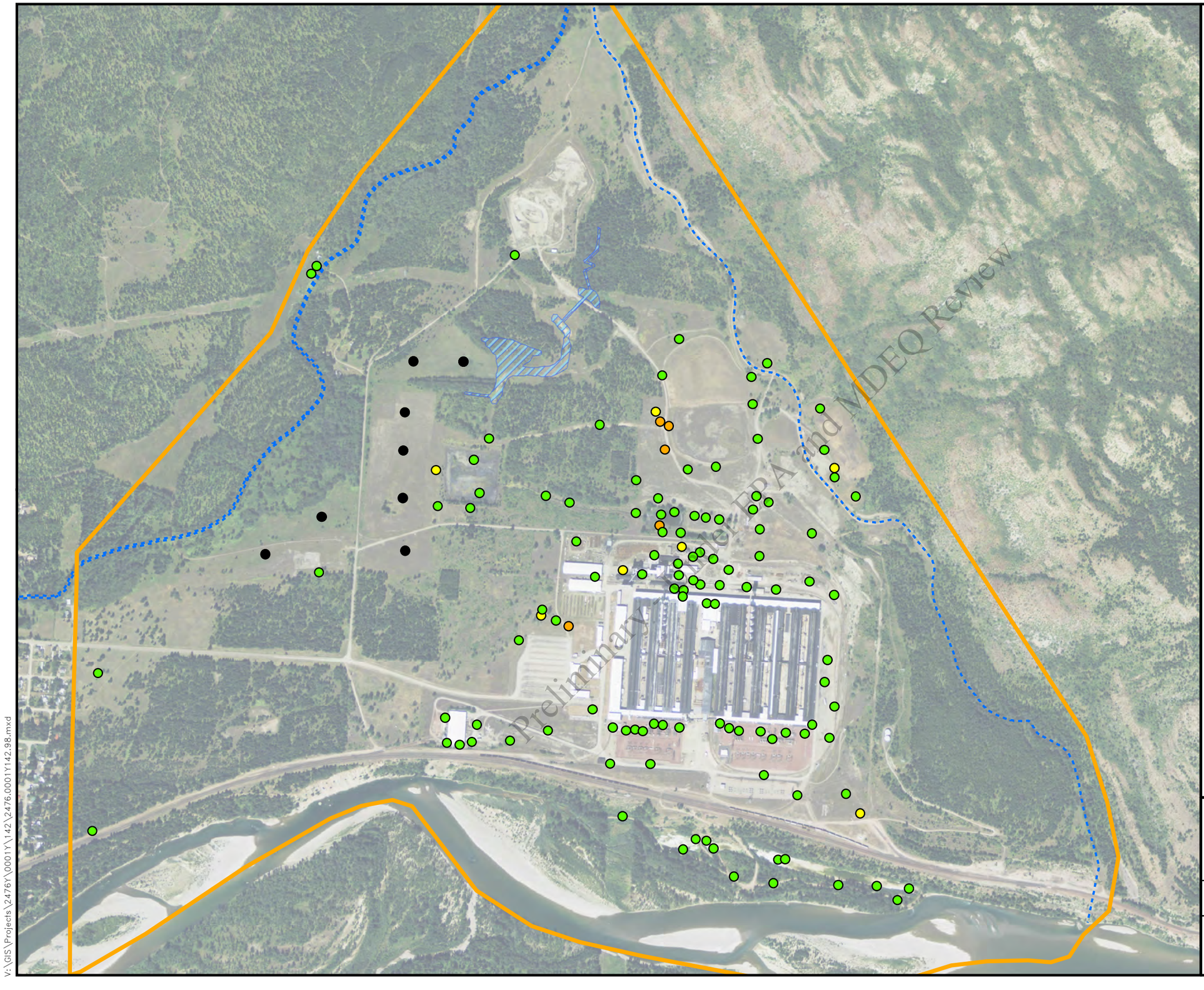
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R30
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.97.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.97.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (541.6)
- Above Highest Background Shallow Soil Concentration (659)
- Above UTL (1656)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

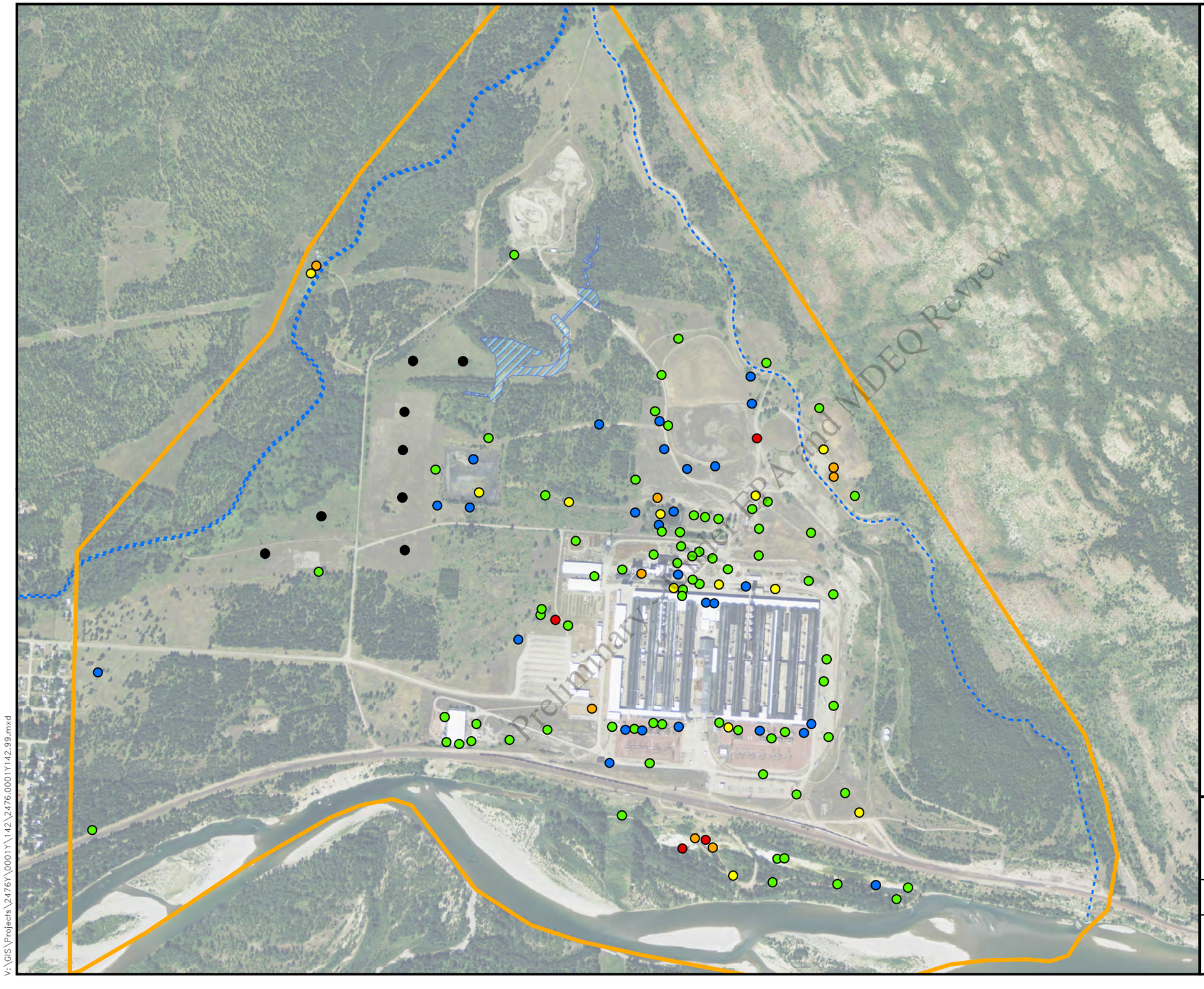
Title:
COMPARISON OF MANGANESE CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R31
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.98.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.98.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (0.0276)
- Above Highest Background Shallow Soil Concentration (0.039)
- Above UTL (0.0566)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF MERCURY CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

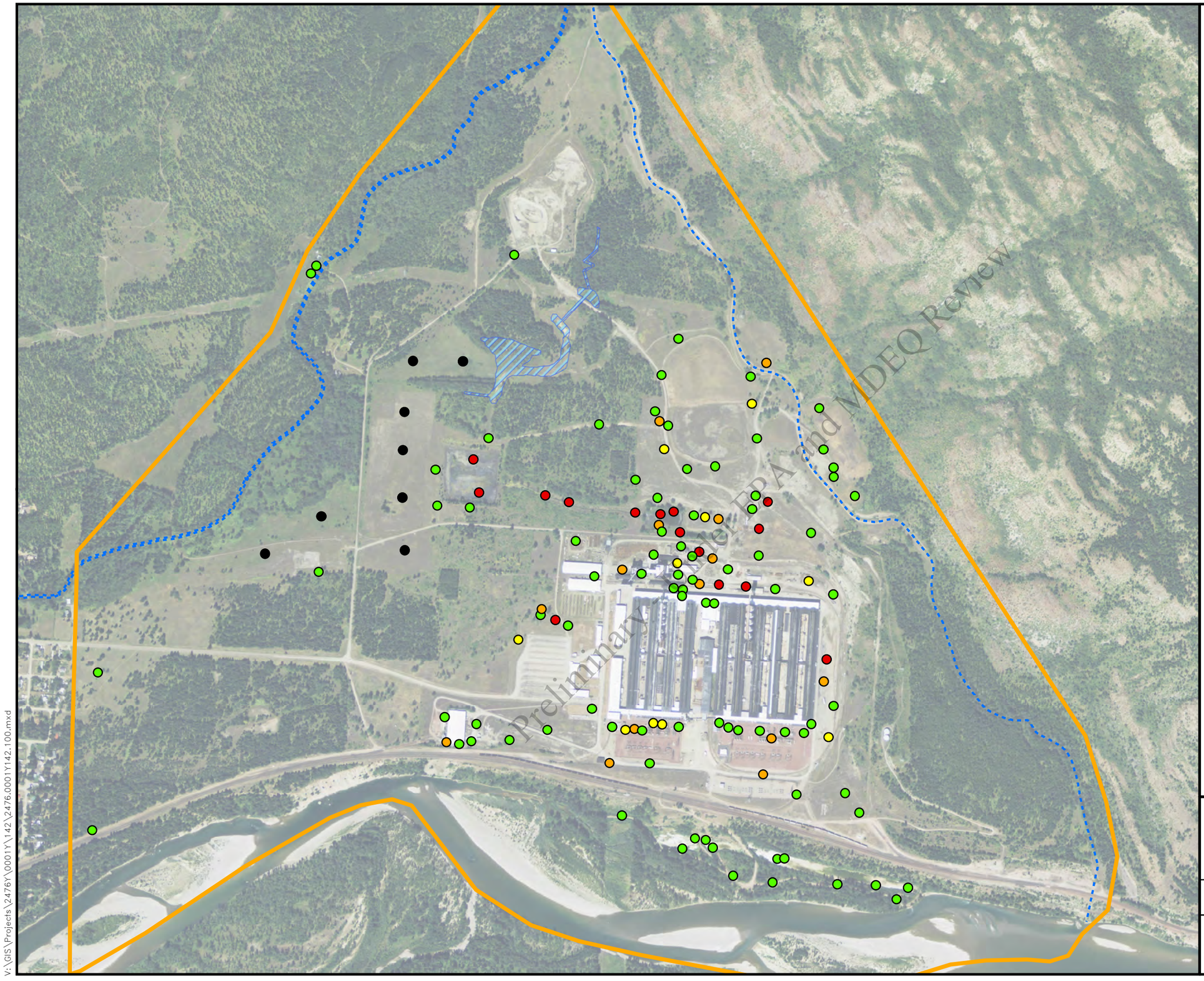
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R32
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.99.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.99.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (13.01)
- Above Highest Background Shallow Soil Concentration (14.20)
- Above UTL (20.76)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF NICKEL CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

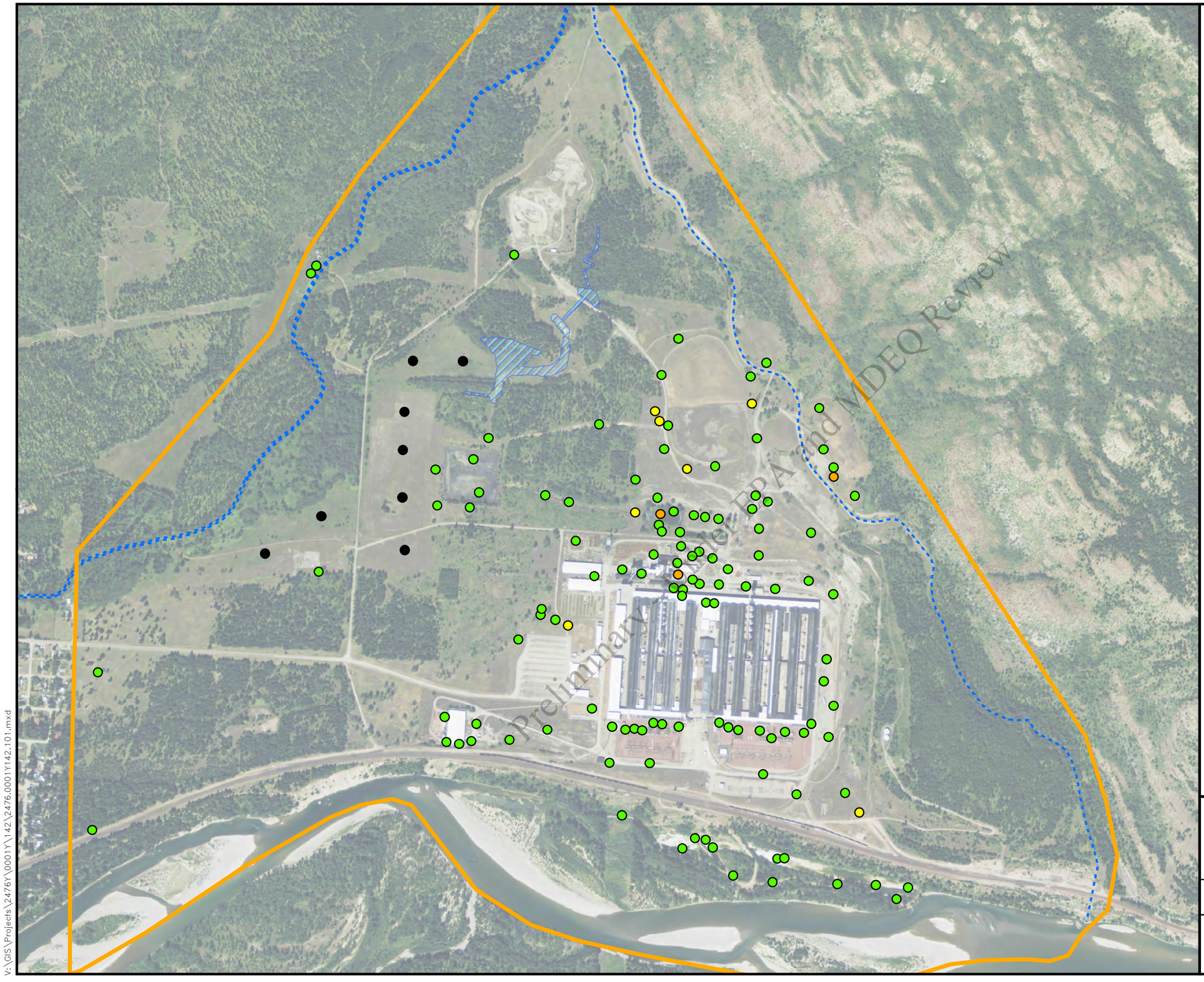
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R33
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.100.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.100.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (1148)
- Above Highest Background Shallow Soil Concentration (1340)
- Above UTL (2017)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title: **COMPARISON OF POTASSIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS**

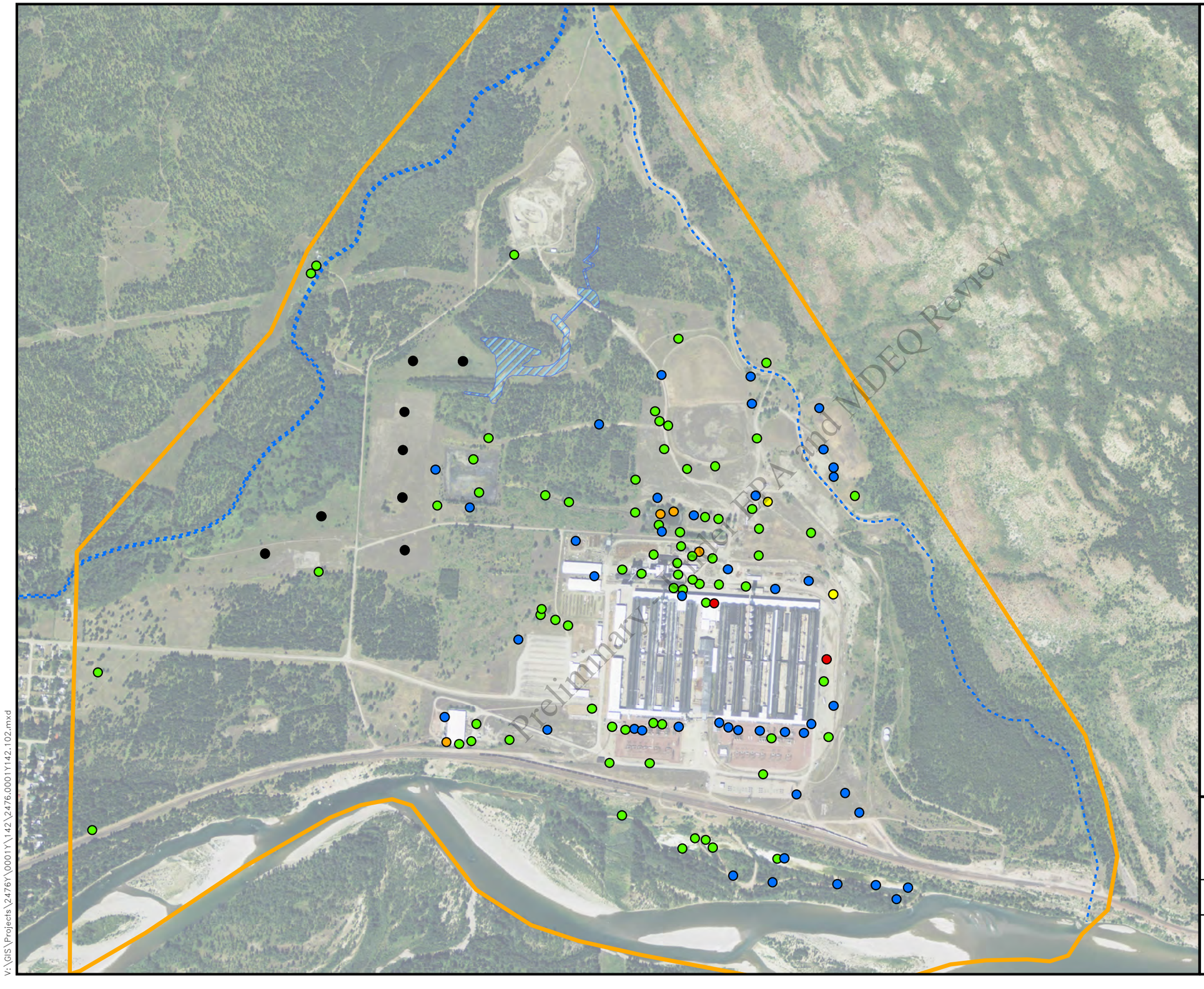
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R34
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.101.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.101.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (417.5)
- Above Highest Background Shallow Soil Concentration (555)
- Above UTL (769.9)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

Title:

COMPARISON OF SODIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

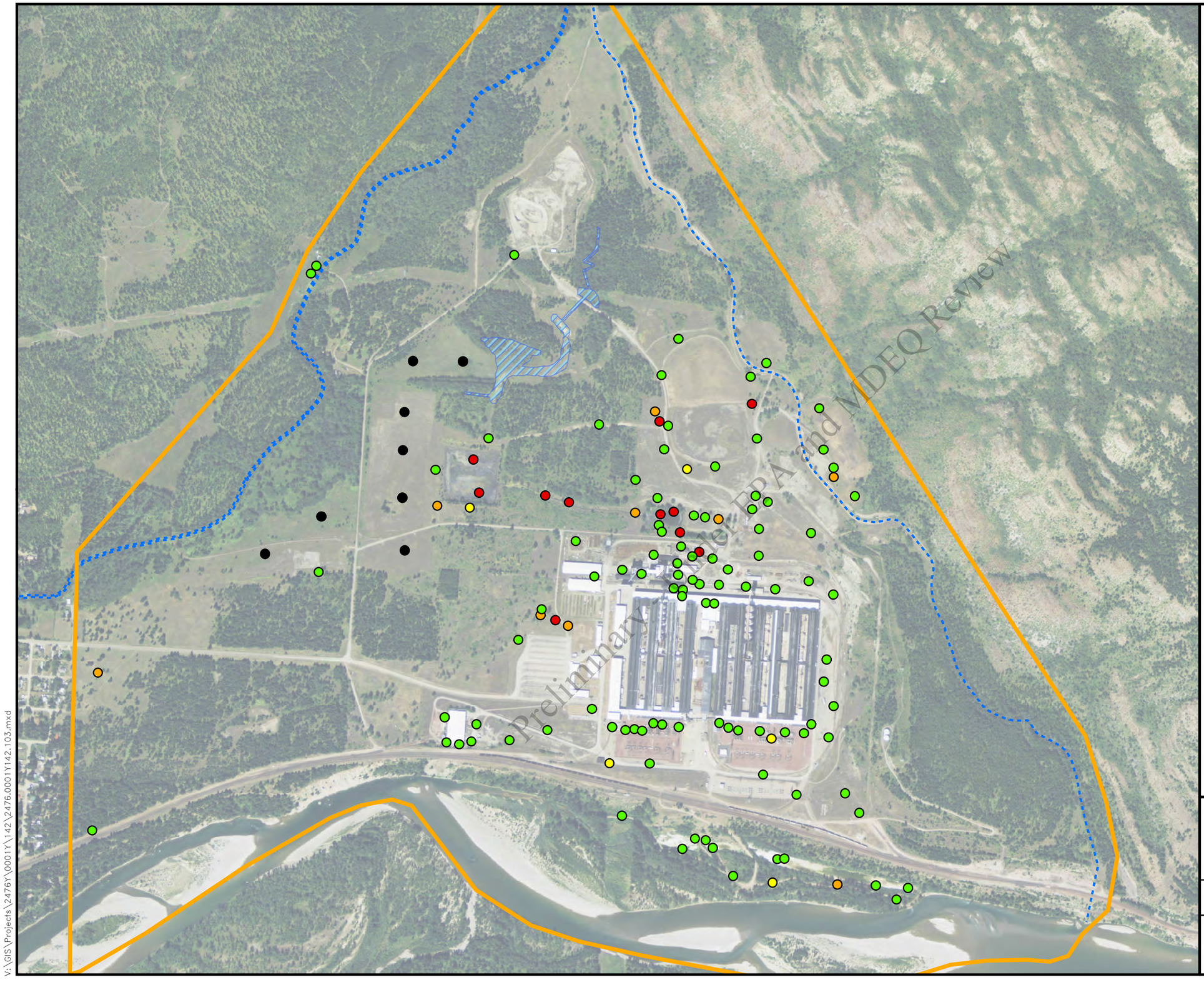
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R35
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.102.mxd		

EPA and MDEQ Review
Preliminary - Under Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.102.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (13.8)
- Above Highest Background Shallow Soil Concentration (15.1)
- Above UTL (20.04)
- Background Soil Sample Locations

Notes

All shallow soil samples were collected from a 0.5 – 2 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:

COMPARISON OF VANADIUM CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS

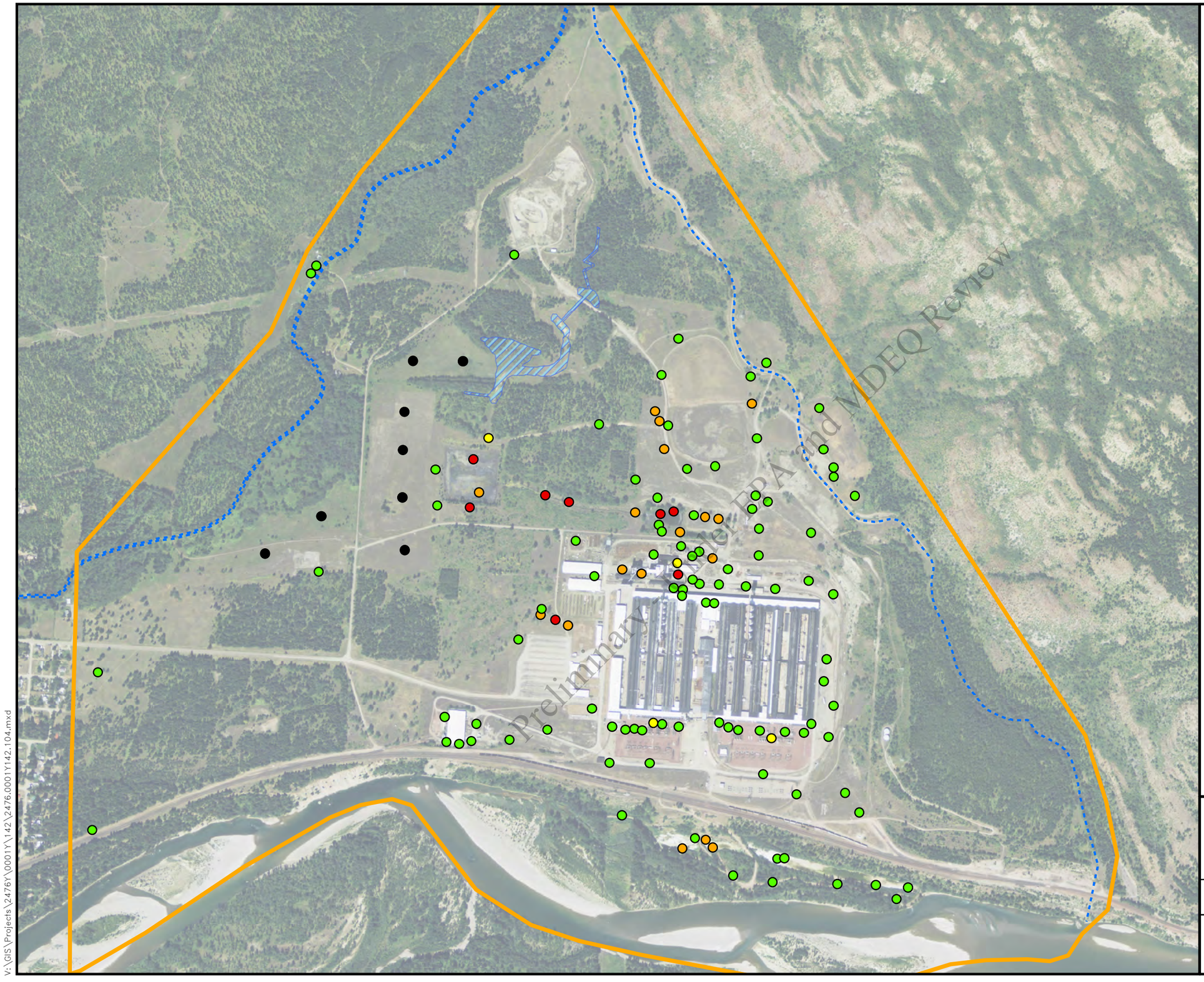
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R36
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.103.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.103.mxd



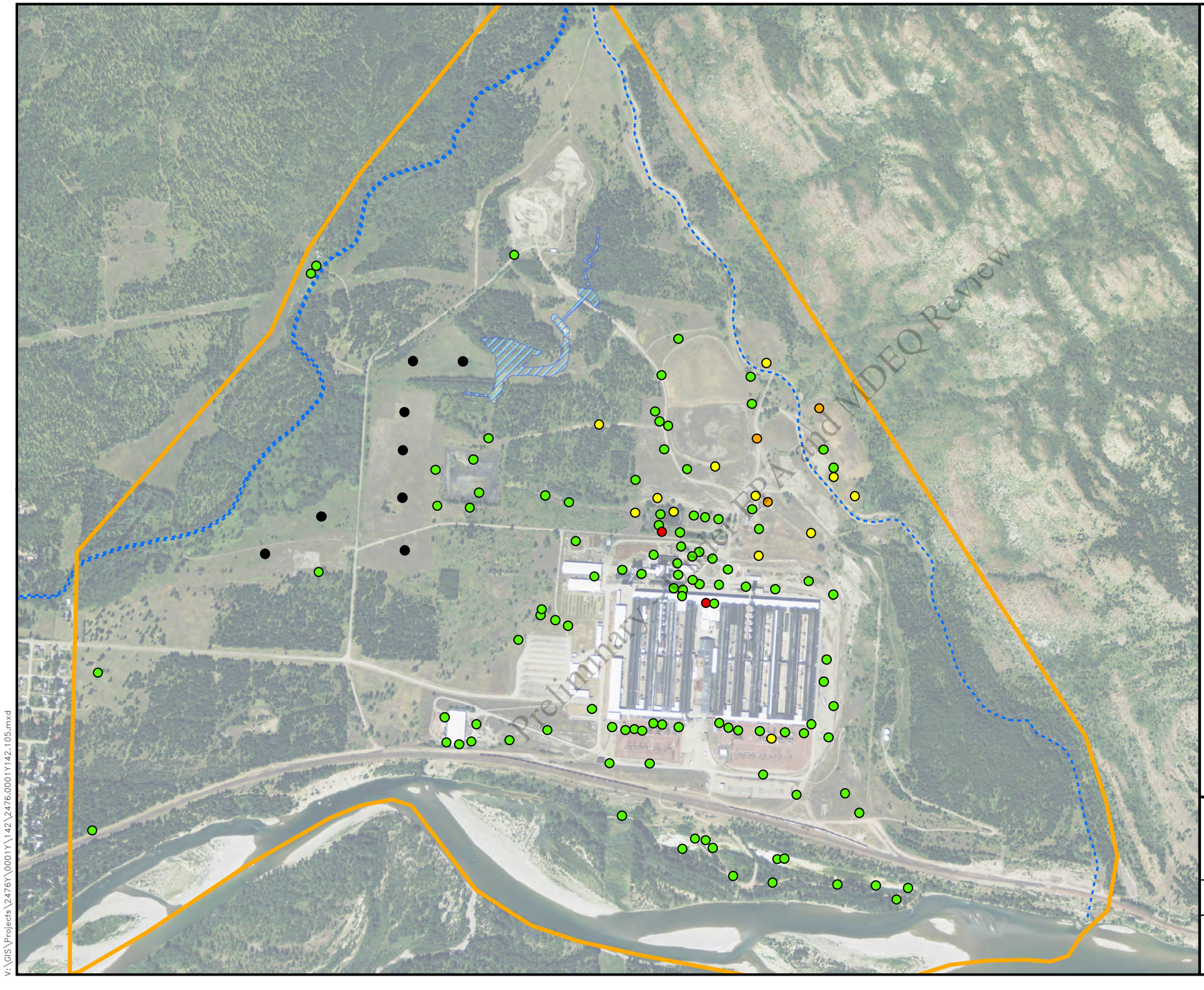
V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.104.mxd

Title:
COMPARISON OF ZINC CONCENTRATIONS IN SHALLOW SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R37
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.104.mxd		



Title: **COMPARISON OF ALUMINUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS**

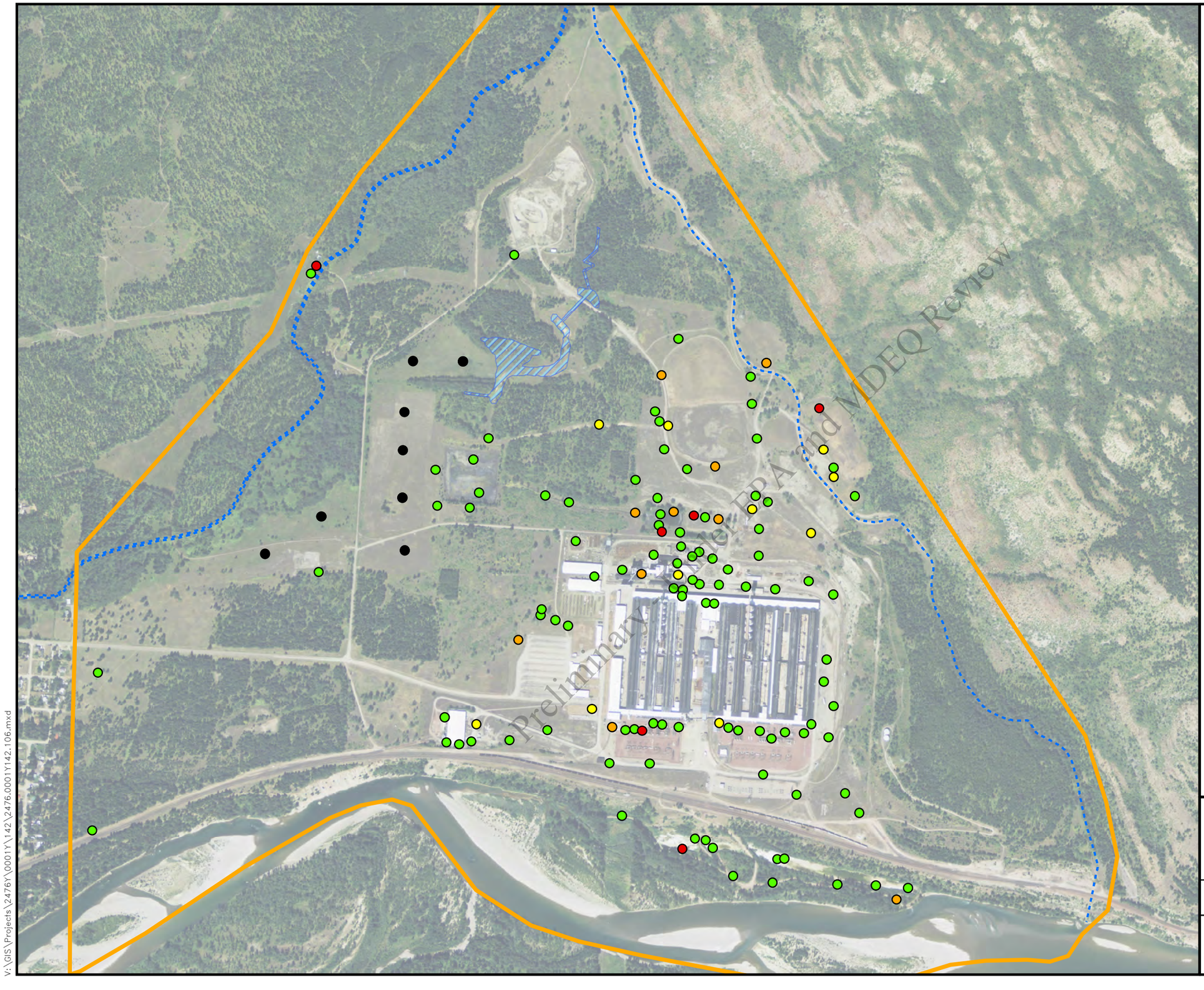
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R38
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.105.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.105.mxd



Title: **COMPARISON OF ARSENIC CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS**

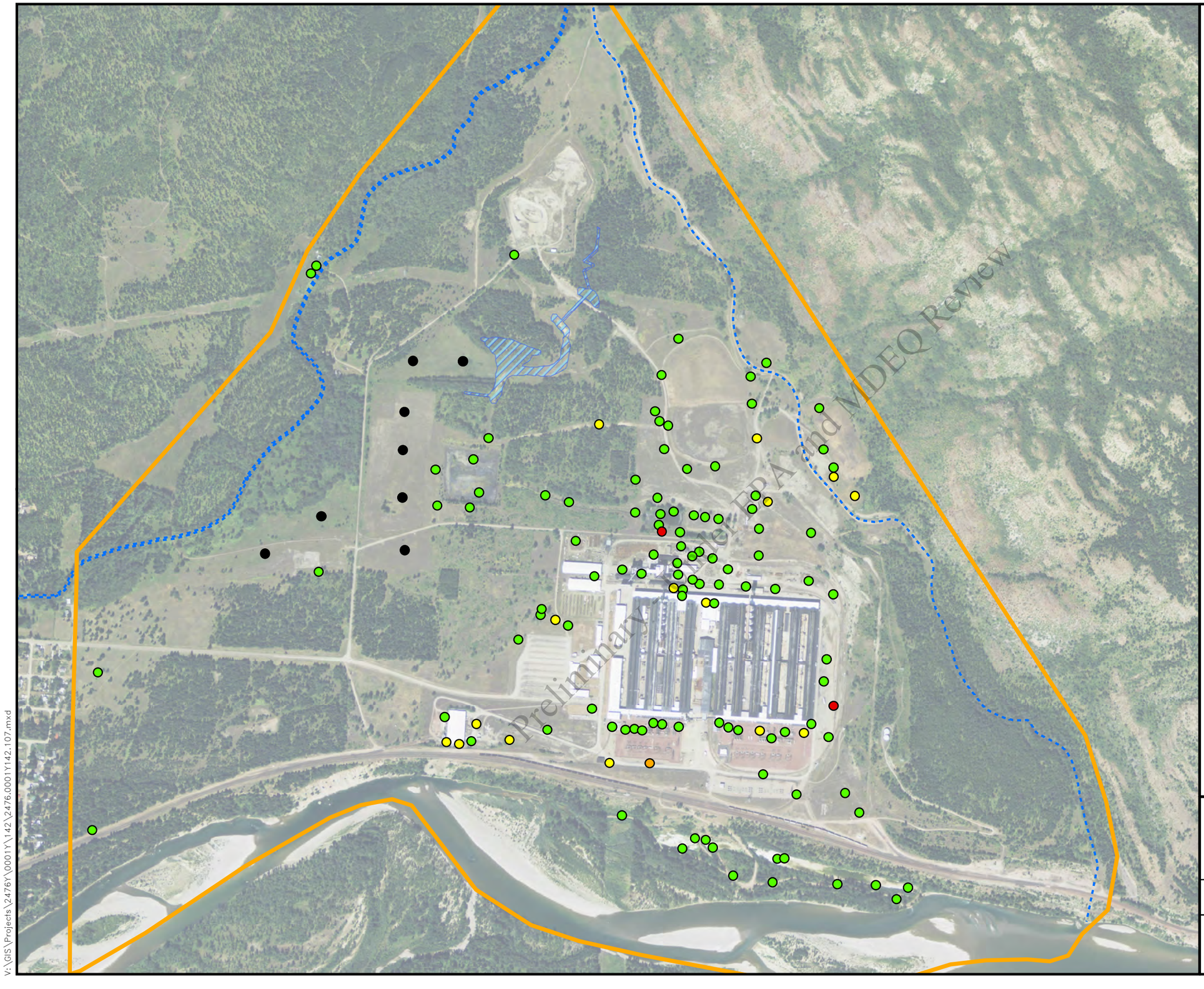
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R39
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.106.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.106.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (103)
- Above Highest Background Intermediate–Depth Soil Concentration (172)
- Above UTL (222.5)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

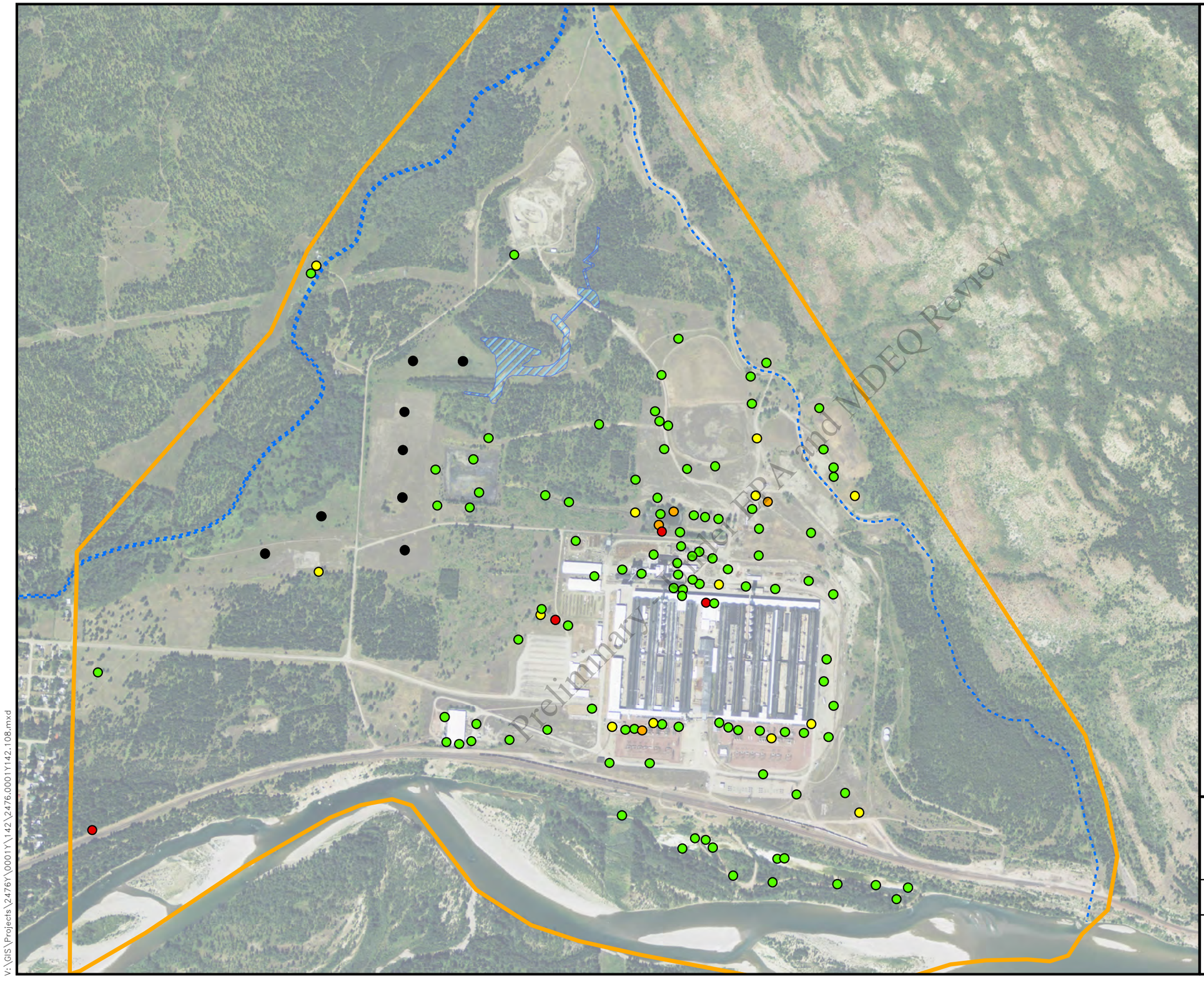
Title:
COMPARISON OF BARIUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R40
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.107.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.107.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (0.417)
- Above Highest Background Intermediate–Depth Soil Concentration (0.49)
- Above UTL (0.676)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

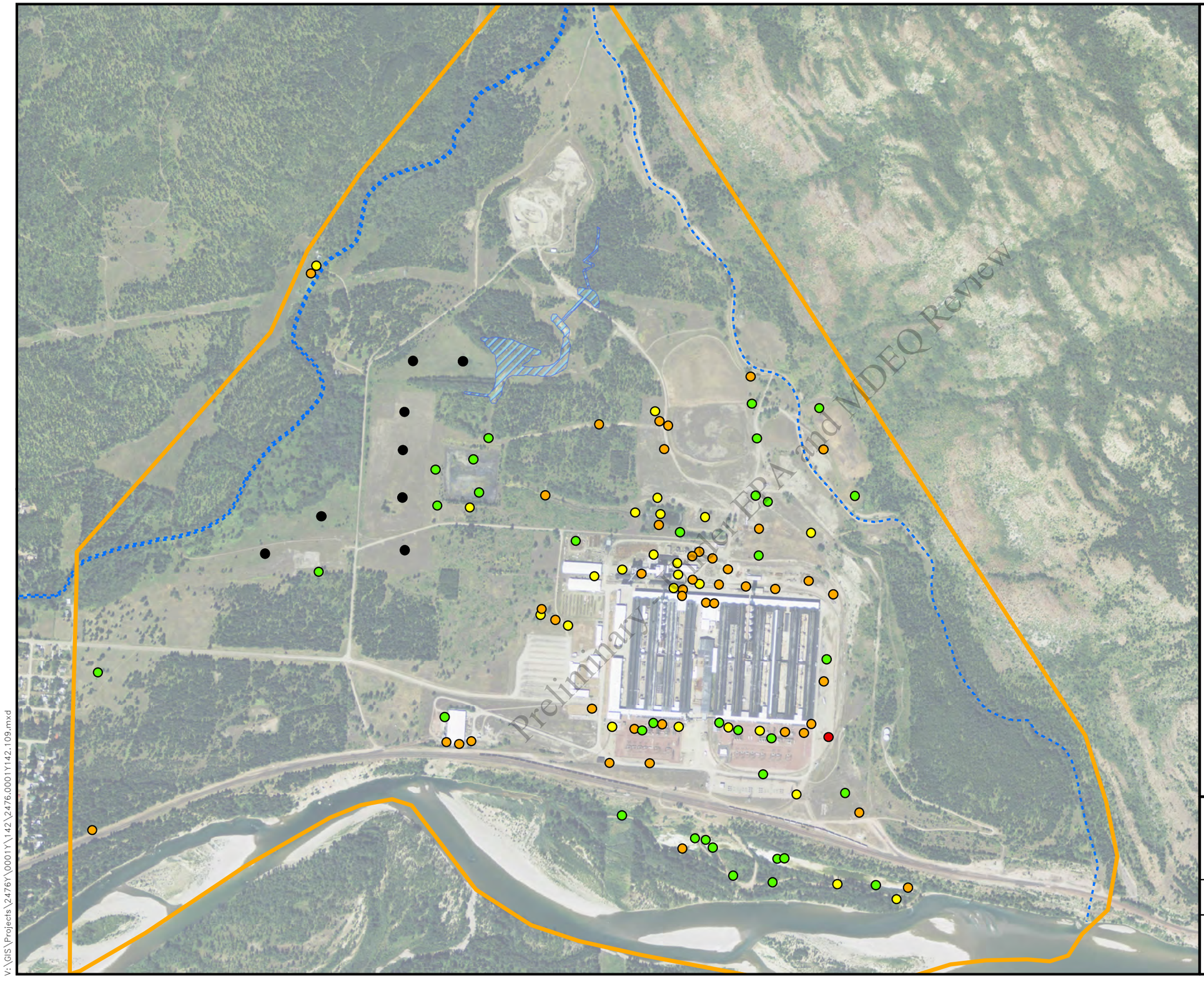
Title:
COMPARISON OF BERYLLIUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R41
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.108.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.108.mxd



N

Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (23017)
- Above Highest Background Intermediate–Depth Soil Concentration (32300)
- Above UTL (48647)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

Preliminary – Under EPA and MDEQ Review

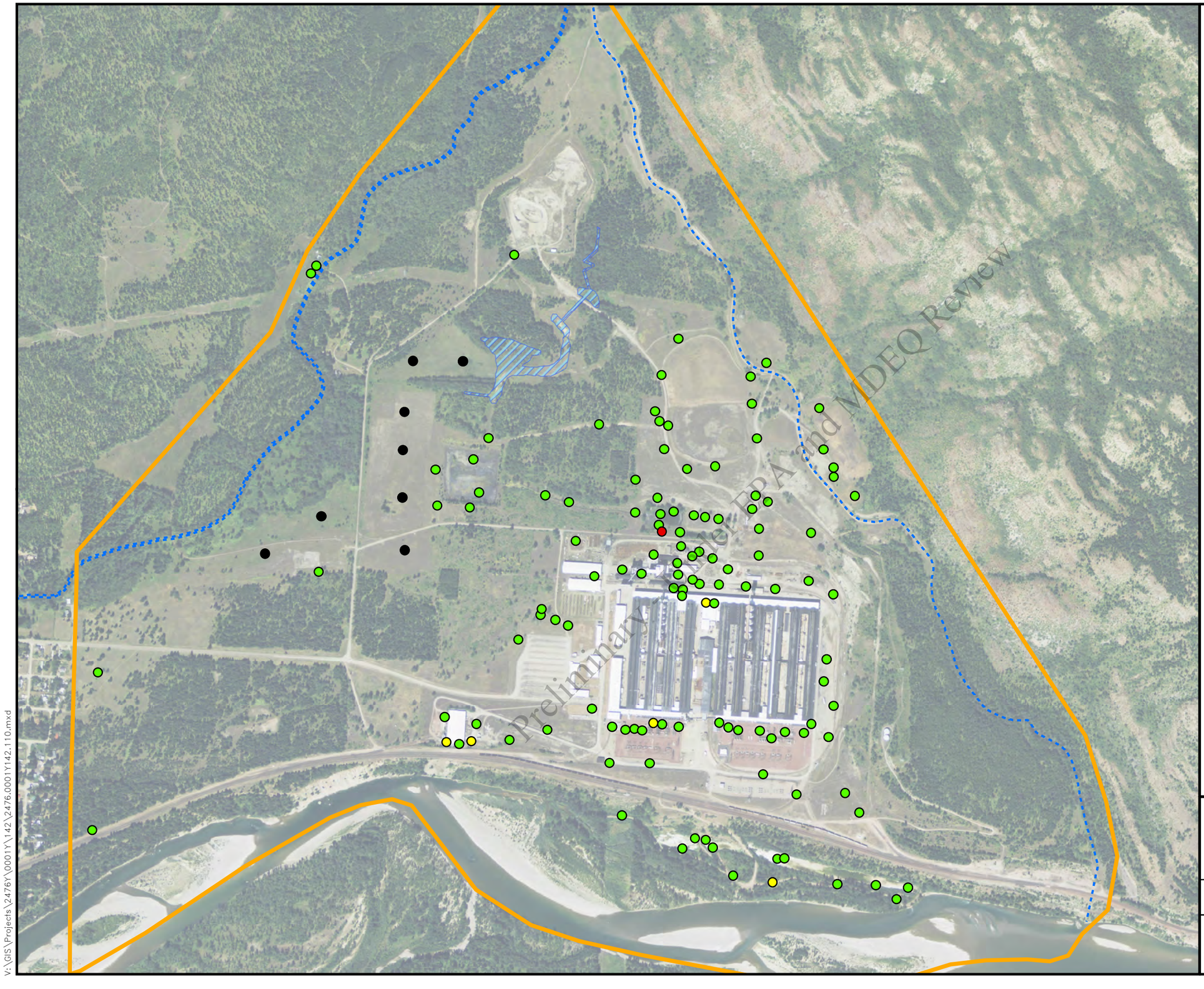
Title:
COMPARISON OF CALCIUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

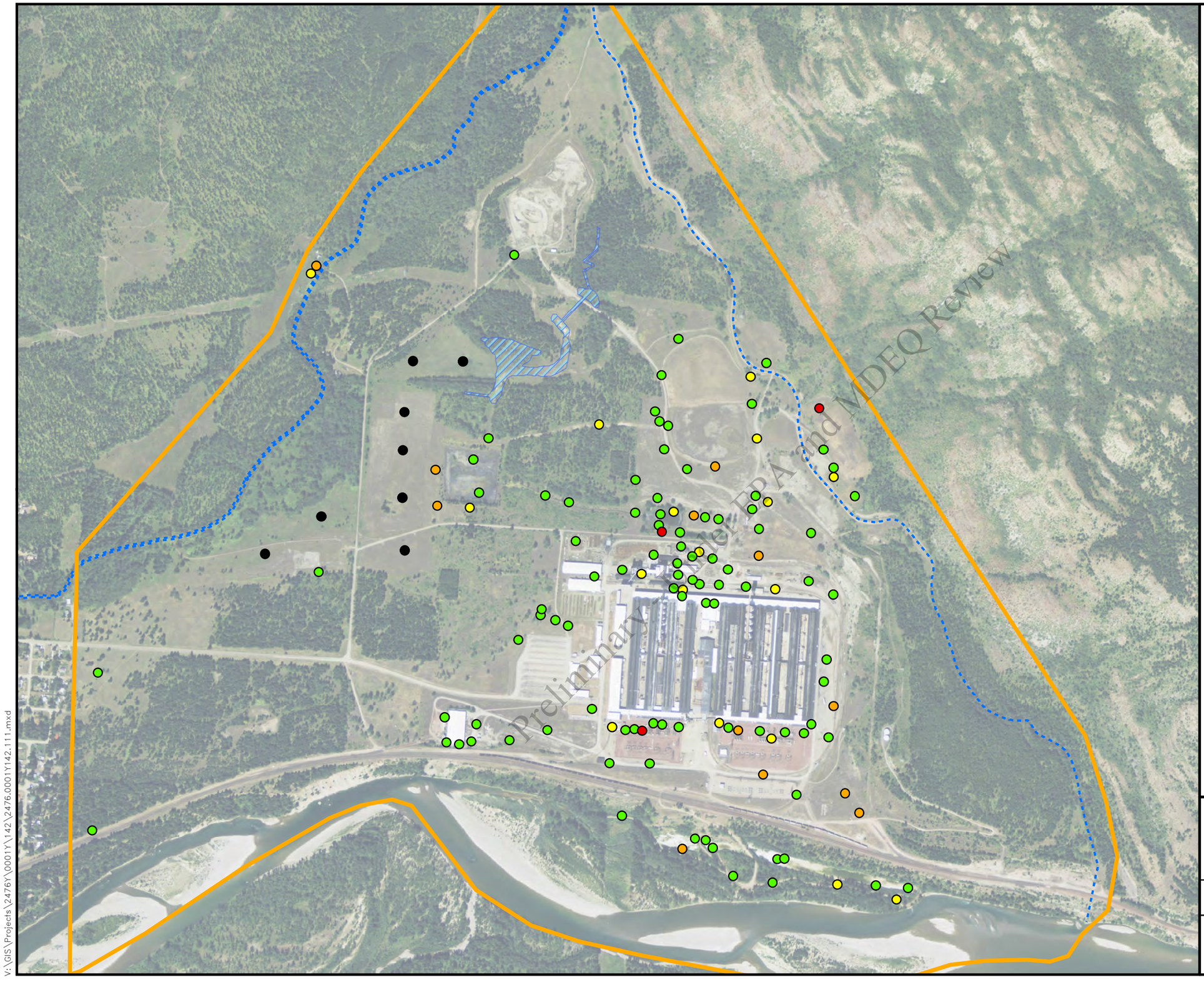
Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R42
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.109.mxd		

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Preliminary – Under EPA and MDEQ Review

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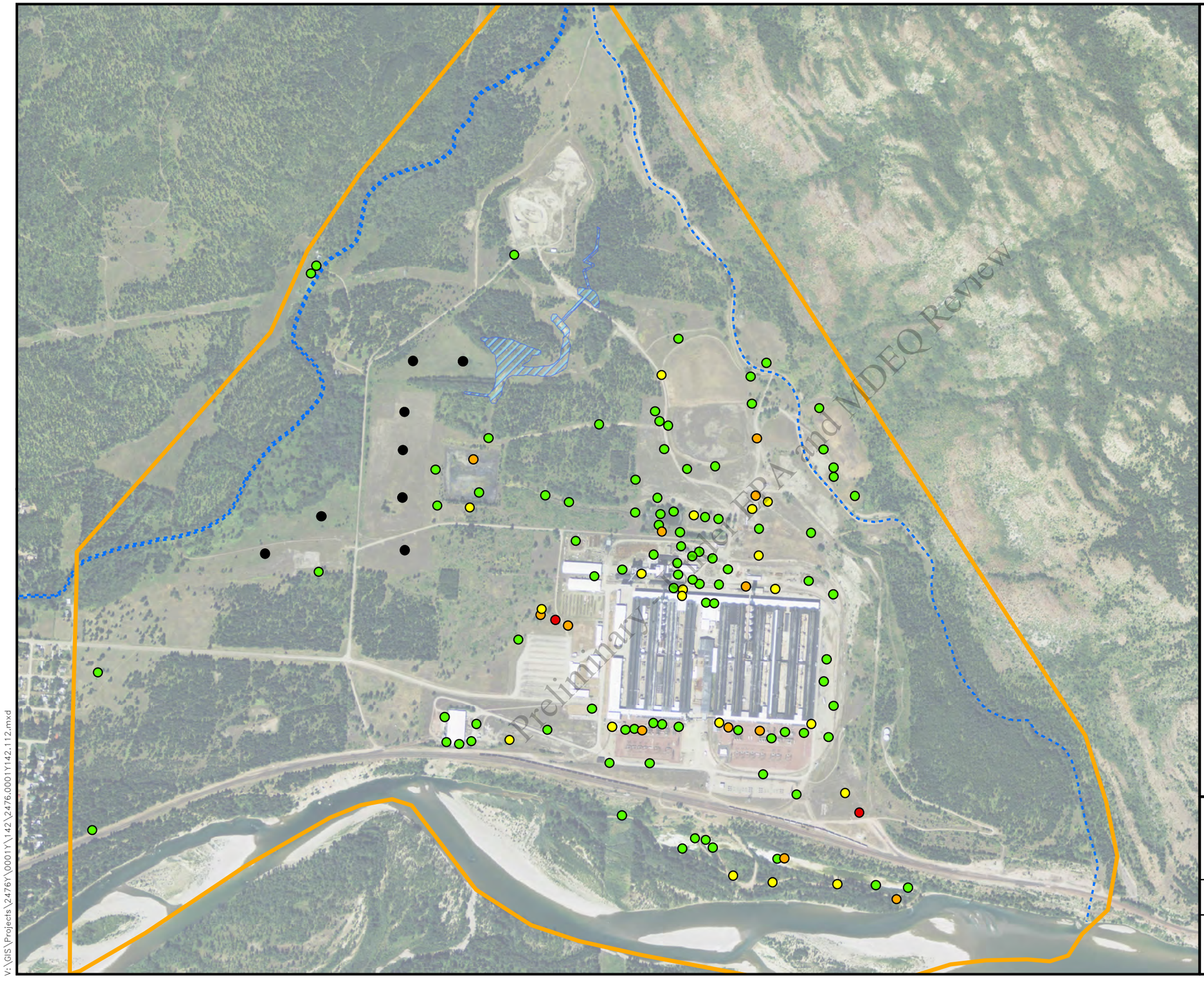
Title:
COMPARISON OF COBALT CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R44
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.111.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.111.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (13.79)
- Above Highest Background Intermediate–Depth Soil Concentration (17.4)
- Above UTL (28.06)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

Title:
COMPARISON OF COPPER CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

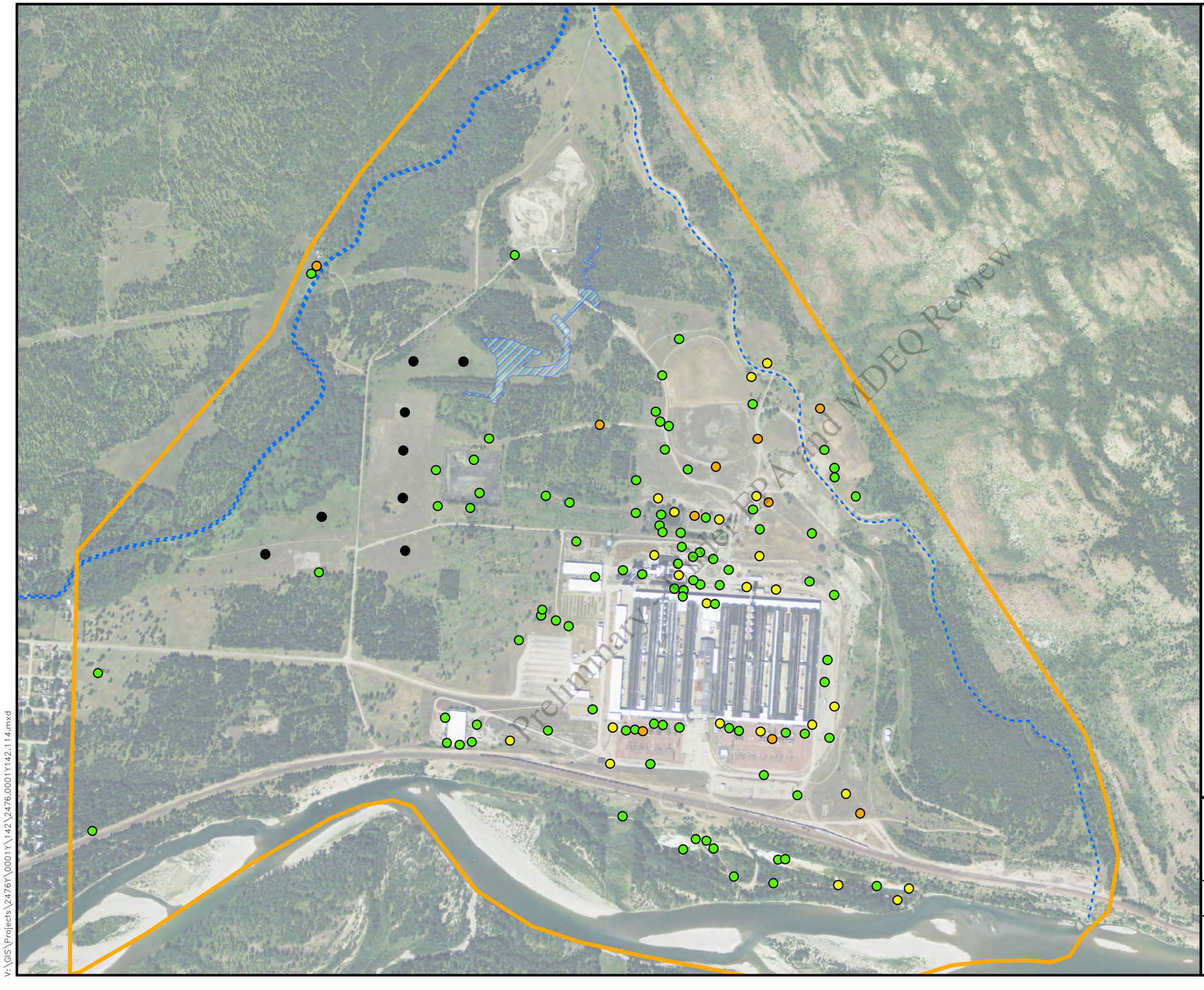
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**R45**
Project Mgr: M.R.	R45	
File: 2476.0001Y142.112.mxd		

EPA and MDEQ Review
Preliminary – Under Review

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.112.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (13274)
- Above Highest Background Intermediate–Depth Soil Concentration (15000)
- Above UTL (20056)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary – Under Review

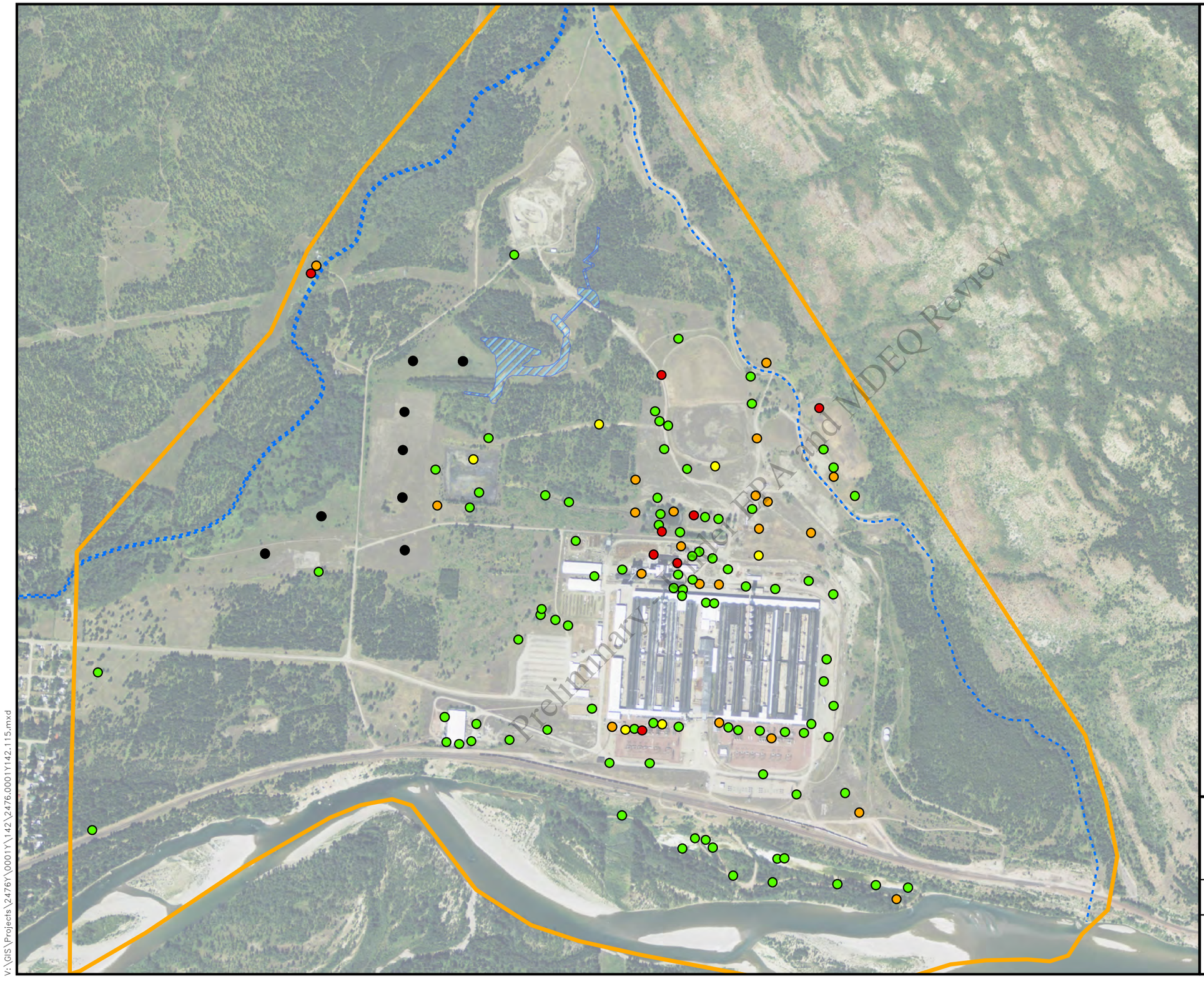
Title:
COMPARISON OF IRON CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**R46**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.114.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.114.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (7.207)
- Above Highest Background Intermediate–Depth Soil Concentration (7.9)
- Above UTL (11.95)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary – Under Review

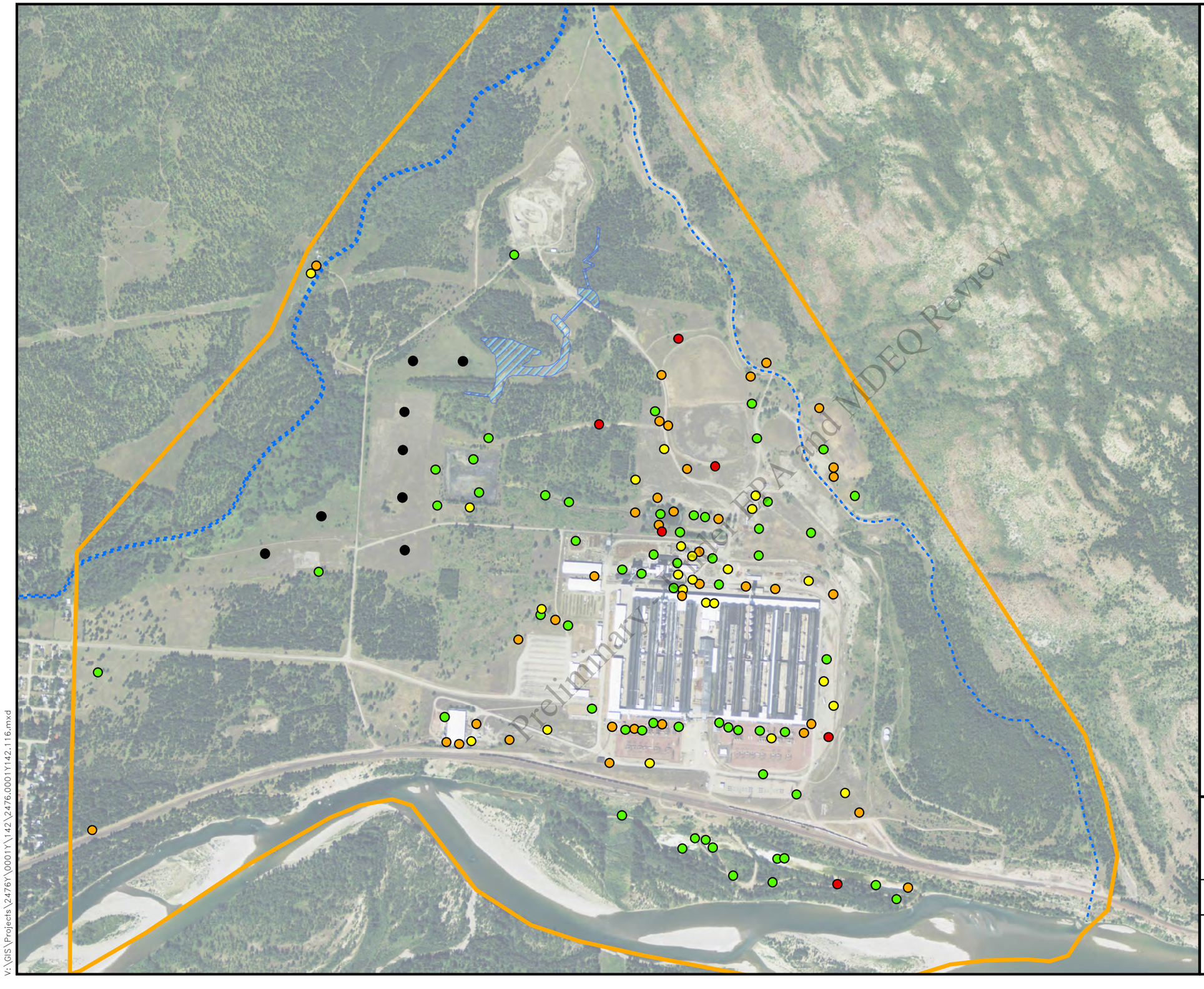
Title:
COMPARISON OF LEAD CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**R47**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.115.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.115.mxd



Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (10615)
- Above Highest Background Intermediate–Depth Soil Concentration (12100)
- Above UTL (16562)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900 Feet

Title:

COMPARISON OF MAGNESIUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

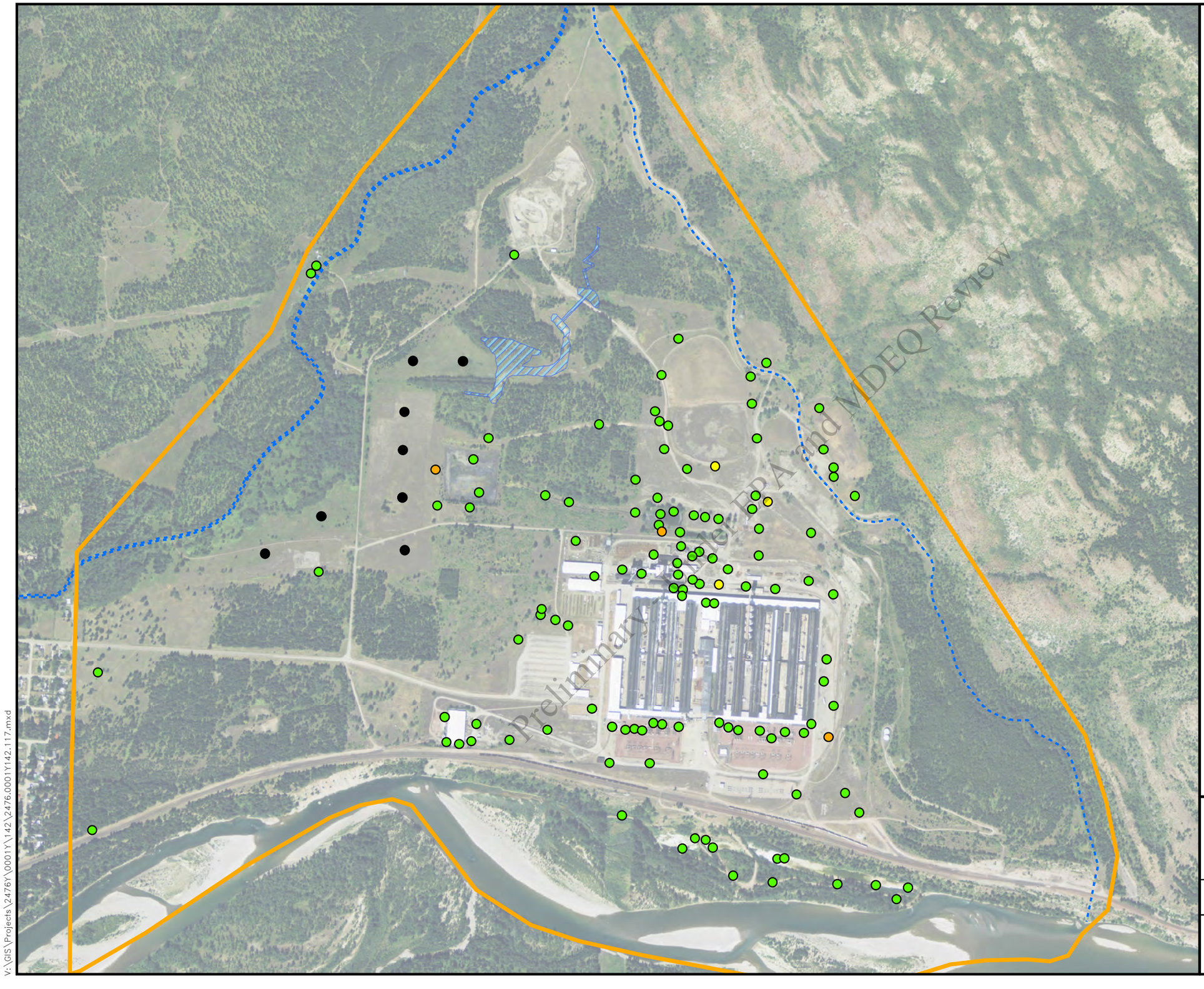
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

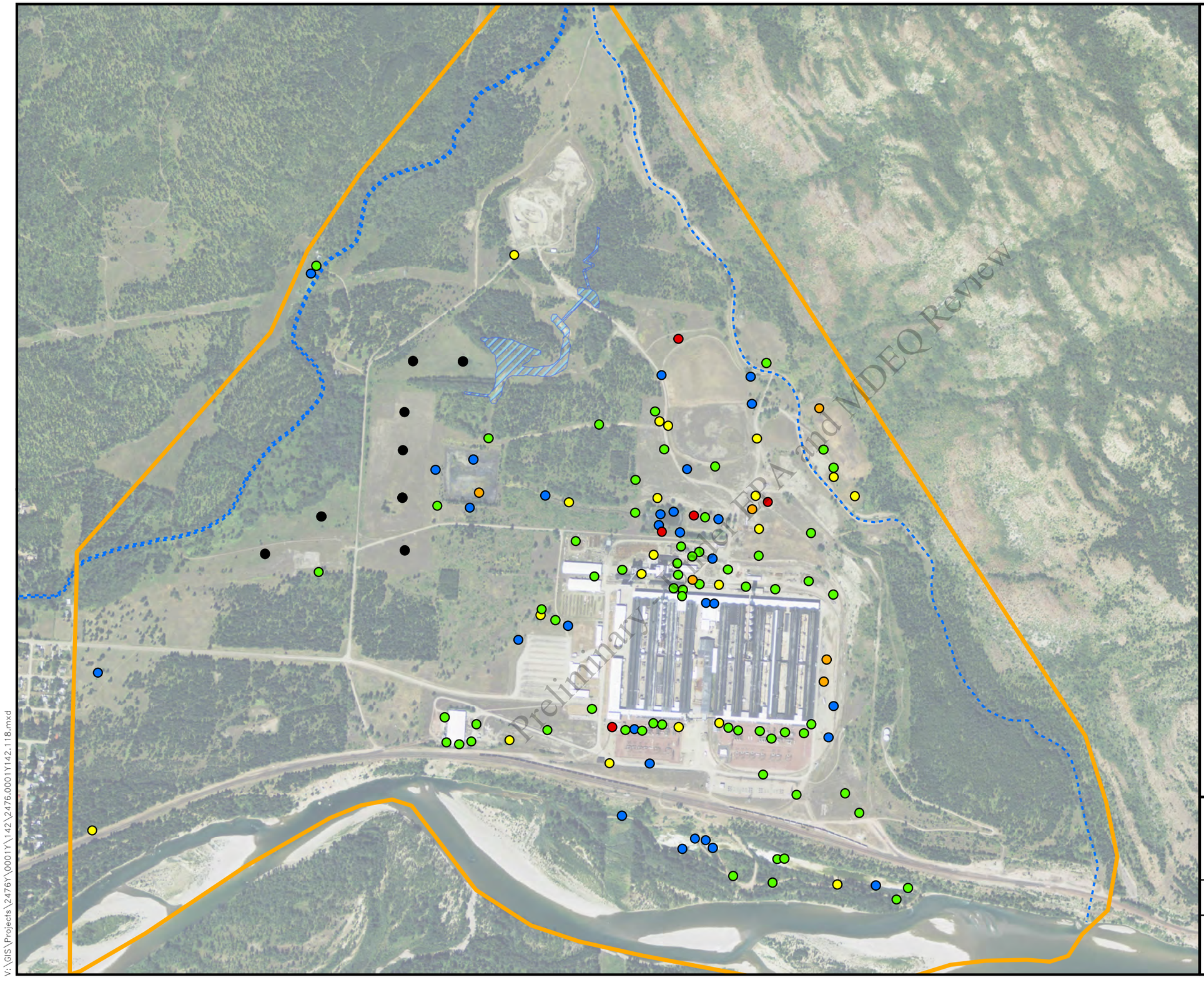
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R48
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.116.mxd		

Preliminary - Under EPA and MDEQ Review

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N
Legend
Analyte Not Detected
ND – 95% UCL
Above 95% UCL (493.9)
Above Highest Background Intermediate–Depth Soil Concentration (642)
Above UTL (1100)
Background Soil Sample Locations
Notes
All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit
450 0 450 900
Feet
Title:
COMPARISON OF MANGANESE CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC
ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management
Compiled by: M.R.
Date: 20FEB17
Prepared by: M.R.
Scale: AS SHOWN
Project Mgr: M.R.
Project: 2476.0001Y002
File: 2476.0001Y142.117.mxd
FIGURE
R49
Preliminary – Under EPA and MDEQ Review
V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.117.mxd



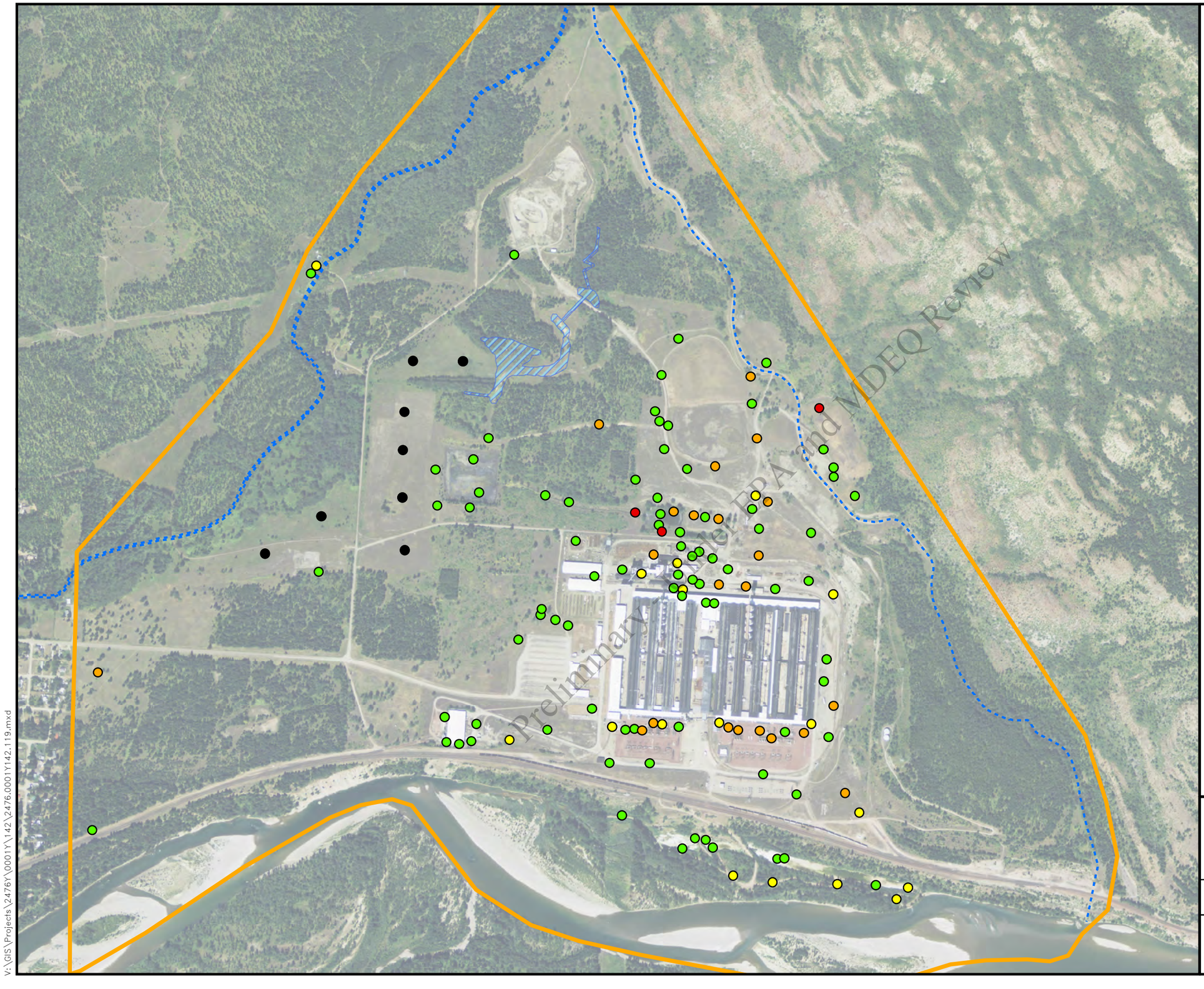
Title:
COMPARISON OF MERCURY CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**R50**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.118.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.118.mxd



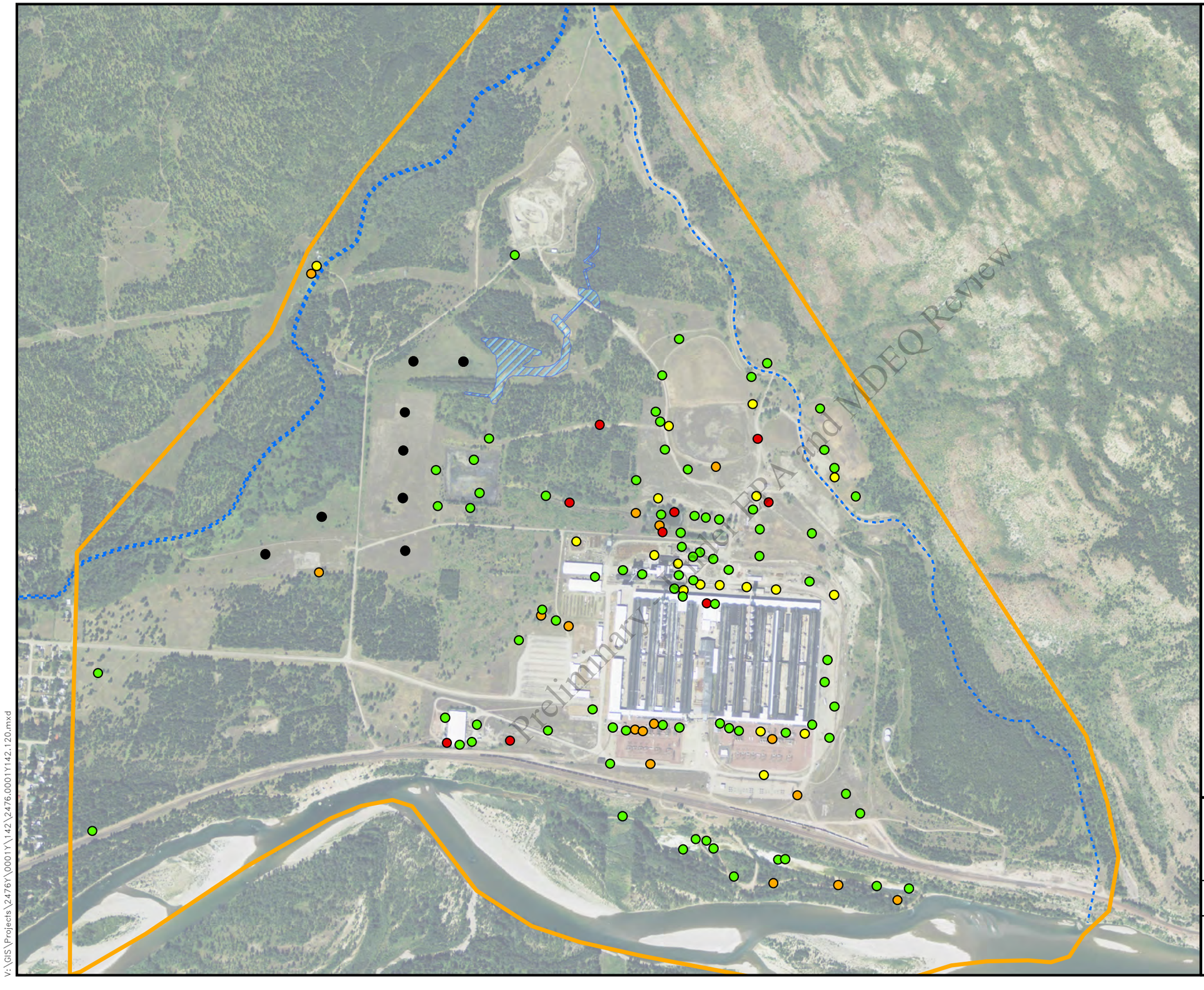
Title:
COMPARISON OF NICKEL CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R51
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.119.mxd		

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Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (716.9)
- Above Highest Background Intermediate–Depth Soil Concentration (788)
- Above UTL (1057)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

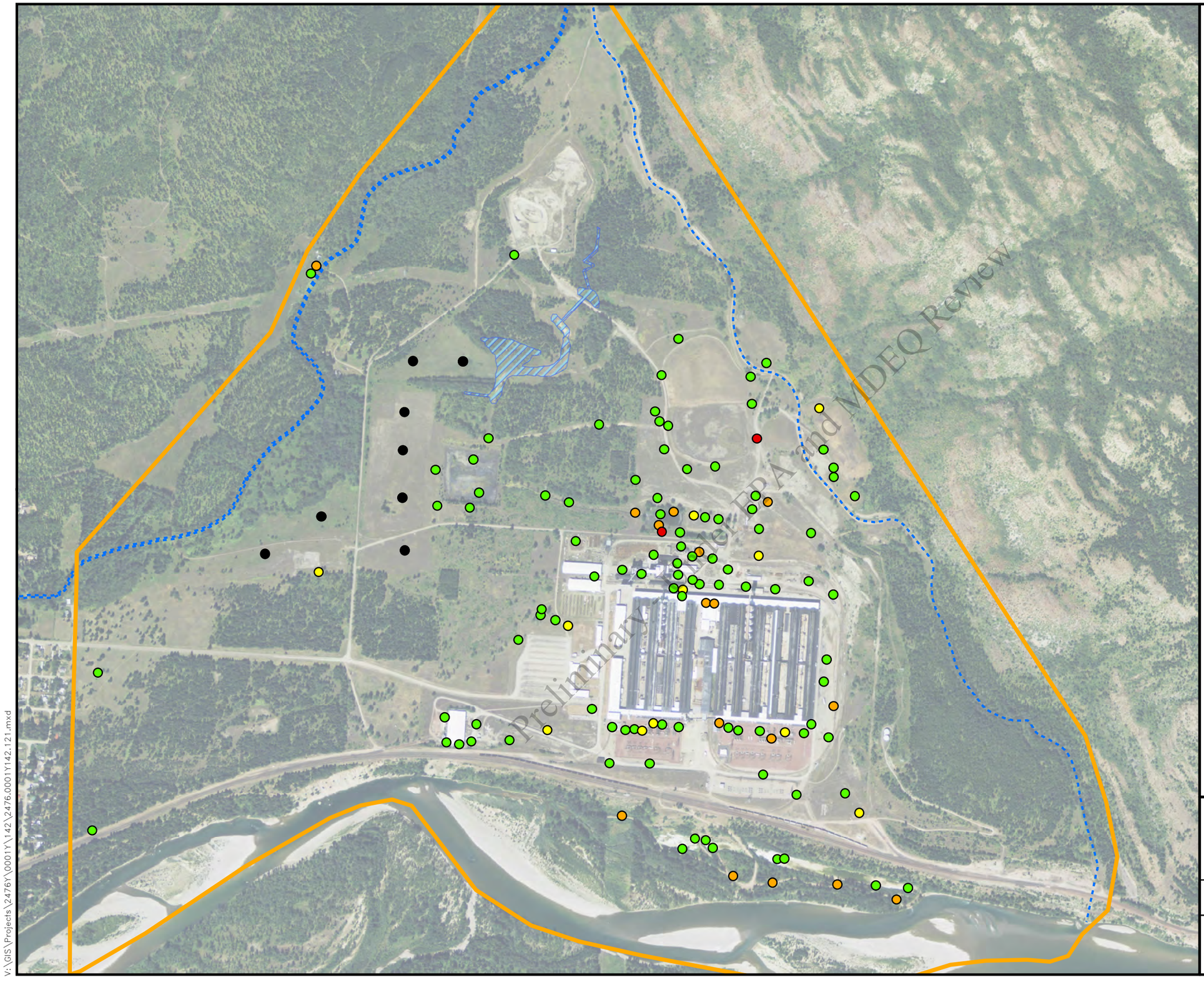
Title:
COMPARISON OF POTASSIUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R52
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.120.mxd		

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Title: **COMPARISON OF VANADIUM CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS**

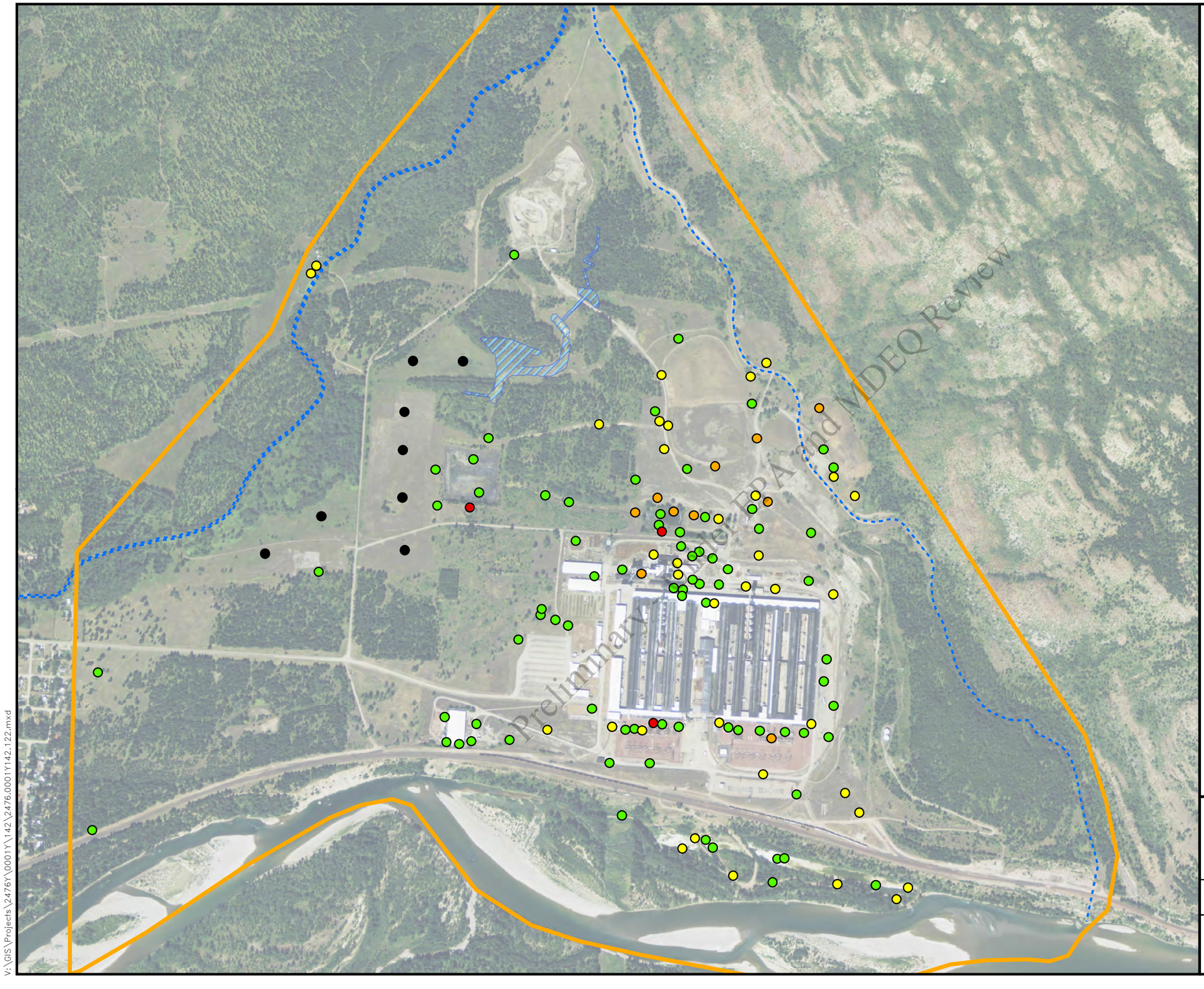
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R53
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.121.mxd		

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Legend

- Analyte Not Detected
- ND – 95% UCL
- Above 95% UCL (33.32)
- Above Highest Background Intermediate–Depth Soil Concentration (41.30)
- Above UTL (52.10)
- Background Soil Sample Locations

Notes

All Intermediate–Depth soil samples were typically collected from a 10 – 12 feet depth interval
ND – Non Detect
UCL – Upper Confidence Limit
UTL – Upper Tolerance Limit

450 0 450 900
Feet

EPA and MDEQ Review
Preliminary - Under Review

Title:
COMPARISON OF ZINC CONCENTRATIONS IN INTERMEDIATE-DEPTH SOIL TO BACKGROUND STATISTICS
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	R54
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.122.mxd		

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APPENDIX S

Physical Soil and Sediment Characteristics Data

1. Grain Size
2. Soil Moisture Content and Bulk Density

Preliminary - Under EPA and MDEQ Review

Table S1. Grain Size

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-008A	CFMW-011A	CFMW-011A	CFMW-011A	CFMW-016A	CFMW-016A	CFMW-023A	CFMW-025A
Sample Date:		6/13/2016	6/25/2016	6/27/2016	6/27/2016	6/22/2016	6/22/2016	6/18/2016	7/13/2016
Sample Depth (ft bls):		90 - 91	81 - 82	136 - 137	155 - 156	121 - 122	180 - 181	124 - 125	37 - 38
Sample Designation:		CFMW-008ASO-90-91-GSA	CFMW-011A-SO-81-82-GSA	CFMW-011A-SO-136-137-GSA	CFMW-011A-SO-155-156-GSA	CFMW-016A-SO-121-122-GSA	CFMW-016A-SO-180-181-GSA	CFMW-023A-SO-124-125-GSA	CFMW-025A-SO-37-38-GSA
Parameter	Unit								
Gravel	percent	34.5	0	0	13	20.9	33.6	11.1	29.6
Coarse Sand	percent	13	0	1.9	17	12	18.7	3.5	8.4
Medium Sand	percent	13.5	29.3	3.3	31.4	12.7	10.7	7.6	10.4
Fine Sand	percent	10.9	61.2	5.5	10.7	15.9	7	39.1	12.9
Silt	percent	13.2	7	36.6	11.6	31.2	13.4	30.1	24.1
Clay	percent	14.9	2.5	52.7	16.3	7.3	16.6	8.6	14.6
%Total Gravel	percent	34.5	0	0	13	20.9	33.6	11.1	29.6
% Total Sand	percent	37.4	90.5	10.7	59.1	40.6	36.4	50.2	31.7
% Total Fines	percent	28.1	9.5	89.3	27.9	38.5	30	38.7	38.7

Total Fines includes Sit and Clay

Total Sands includes Coarse Sand, Medium Sand, and Fine Sand

Preliminary - Under EPA and MDEQ Review

Table S1. Grain Size

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-025A	CFMW-025A	CFMW-032A	CFMW-032A	CFMW-032A	CFMW-045A	CFMW-045A	CFMW-059A
Sample Date:		7/13/2016	7/13/2016	8/8/2016	8/8/2016	8/9/2016	8/12/2016	8/15/2016	7/23/2016
Sample Depth (ft bls):		65 - 66	90 - 91	65 - 66	94 - 95	198 - 199	95 - 96	281 - 282	85 - 86
Sample Designation:		CFMW-025A-SO-65-66-GSA	CFMW-025A-SO-90-91-GSA	CFMW-032A-SO-65-66-GSA	CFMW-032A-SO-94-95-GSA	CFMW-032A-SO-198-199-GSA	CFMW-045A-SO-95-96-GSA	CFMW-045A-SO-281-282-GSA	CFMW-059A-SO-85-86-GSA
Parameter	Unit								
Gravel	percent	6.4	26.1	4.8	17.6	37.4	0	21.4	0
Coarse Sand	percent	11.6	16.4	3	14.7	17.2	0	15	0
Medium Sand	percent	17.5	21.3	23.6	14.9	20	0.6	14.1	0.6
Fine Sand	percent	14.9	9.5	56.2	11.2	7.6	70.6	8.7	91.4
Silt	percent	28.4	9.4	10.7	24.2	10.5	25.2	20.9	4.8
Clay	percent	21.2	17.3	1.7	17.4	7.3	3.6	19.9	3.2
%Total Gravel	percent	6.4	26.1	4.8	17.6	37.4	0	21.4	0
% Total Sand	percent	44	47.2	82.8	40.8	44.8	71.2	37.8	92
% Total Fines	percent	49.6	26.7	12.4	41.6	17.8	28.8	40.8	8

Total Fines includes Sit and Clay

Total Sands includes Coarse Sand, Medium Sand, and Fine Sand

Preliminary - Under EPA and MDEQ Review

Table S1. Grain Size

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-059A	CFMW-059A	CFSDP-001	CFSDP-002	CFSDP-003	CFSDP-004	CFSDP-005	CFSDP-006	CFSDP-007	CFSDP-008	CFSDP-009	CFSDP-010	CFSDP-011
Sample Date:		7/23/2016	7/23/2016	9/8/2016	9/16/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/8/2016	9/8/2016	9/6/2016	9/6/2016	9/6/2016
Sample Depth (ft bls):		150 - 151	160 - 161	0 - 0.5	0 - 0.5				0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Designation:		CFMW-059A-SO-150-151-GSA	CFMW-059A-SO-160-161-GSA	CFSDP-001-SO	CFSDP-002-SO	CFSDP-003-SD	CFSDP-004-SD	CFSDP-005-SD	CFSDP-006-SO	CFSDP-007-SO	CFSDP-008-SO	CFSDP-009-SO	CFSDP-010-SO	CFSDP-011-SO
Parameter	Unit													
Gravel	percent	17	25.9	0	0	0	0	0	0	0	0	0	0	0.8
Coarse Sand	percent	7.3	27.4	2.4	11.4	0.5	0	0	8.5	0.4	6.9	3.1	4	24.7
Medium Sand	percent	8.2	28.4	9.2	54.2	0.7	1.4	0.8	19.4	6.1	12.8	14.2	46.8	41.2
Fine Sand	percent	12.1	6.9	79.7	32.4	14.3	28.5	46.5	67.7	63.6	63.9	26.6	34.6	15.3
Silt	percent	35.7	6.7	8.5	1.4	79.5	68.1	51	4.2	28	16	52.2	10.8	17.3
Clay	percent	19.7	4.7	0.3	0.6	5	2	1.7	0.3	1.9	0.4	3.9	3.8	0.7
%Total Gravel	percent	17	25.9	0	0	0	0	0	0	0	0.00	0.00	0.00	0.80
% Total Sand	percent	27.6	62.7	91.3	98.0	15.5	29.9	47.3	95.6	70.1	83.6	43.9	85.4	81.2
% Total Fines	percent	55.4	11.4	8.8	2.0	84.5	70.1	52.7	4.5	29.9	16.4	56.1	14.6	18.0

Total Fines includes Sit and Clay

Total Sands includes Coarse Sand, Medium Sand, and Fine Sand

Preliminary - Under EPA and MDEQ Review

Table S1. Grain Size

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFSDP-012	CFSDP-013	CFSDP-014	CFSDP-015	CFSDP-016	CFSDP-017	CFSDP-018	CFSDP-019	CFSDP-020	CFSDP-021	CFSDP-022	CFSDP-023	CFSDP-024
Sample Date:		9/6/2016	9/6/2016	8/29/2016	8/29/2016	8/29/2016	9/8/2016	9/7/2016	9/7/2016	9/7/2016	9/6/2016	9/6/2016	9/7/2016	9/7/2016
Sample Depth (ft bls):		0 - 0.5	0 - 0.5				0 - 0.5				0 - 0.5	0 - 0.5		
Sample Designation:		CFSDP-012-SO	CFSDP-013-SO	CFSDP-014-SD	CFSDP-015-SD	CFSDP-016-SD	CFSDP-017-SO	CFSDP-018-SD	CFSDP-019-SD	CFSDP-020-SD	CFSDP-021-SO	CFSDP-022-SO	CFSDP-023-SD	CFSDP-024-SD
Parameter	Unit													
Gravel	percent	0	0.1	0	0	0	0	0	0	0	0	0	0	0
Coarse Sand	percent	3.2	15.2	12.1	1	1.2	0	1.8	0.3	0.7	1.1	8.7	0.3	0.6
Medium Sand	percent	33.1	38.3	19.4	10.6	5.3	0.3	16	2.6	8.6	3.9	10.9	10.2	15.1
Fine Sand	percent	25.6	10.7	51	58.6	34.8	87.6	25.7	21.6	31.7	26.6	15.7	25.8	22.9
Silt	percent	35	32.8	15.3	26.3	52.9	11.2	52.6	68.9	51.7	60.6	56	50	54.5
Clay	percent	3.2	2.9	2.2	3.5	5.8	0.9	3.9	6.6	7.3	7.8	8.8	13.7	6.9
%Total Gravel	percent	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% Total Sand	percent	61.9	64.2	82.5	70.2	41.3	87.9	43.5	24.5	41.0	31.6	35.3	36.3	38.6
% Total Fines	percent	38.2	35.7	17.5	29.8	58.7	12.1	56.5	75.5	59.0	68.4	64.8	63.7	61.4

Total Fines includes Sit and Clay

Total Sands includes Coarse Sand, Medium Sand, and Fine Sand

Preliminary - Under EPA and MDEQ Review

Table S2. Soil Moisture Content and Bulk Density
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-008A	CFMW-011A	CFMW-011A	CFMW-011A	CFMW-016A	CFMW-016A	CFMW-023A
Sample Depth (ft bls):		90 - 91	136 - 137	155 - 156	81 - 82	121 - 122	180 - 181	124 - 125
Sample Designation:		CFMW-008ASO-90-91-GSA	CFMW-011A-SO-136-137-GSA	CFMW-011A-SO-155-156-GSA	CFMW-011A-SO-81-82-GSA	CFMW-016A-SO-121-122-GSA	CFMW-016A-SO-180-181-GSA	CFMW-023A-SO-124-125-GSA
Parameter	Unit							
Moisture Content	percent	11.7	19.5	14.7	26	8.1	13.6	12.8
In Place Density	g/cc	1.86	1.33	1.86	1.54	1.77	1.46	1.8

Preliminary - Under EPA and MDEQ Review

Table S2. Soil Moisture Content and Bulk Density
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-025A	CFMW-025A
Sample Depth (ft bls):		37 - 38	65 - 66
Sample Designation:		CFMW-025A-SO-37-38-GSA	CFMW-025A-SO-65-66-GSA
Parameter	Unit		
Moisture Content	percent	10.7	7.4
In Place Density	g/cc	2.06	1.69

Preliminary - Under EPA and MDEQ Review

Table S2. Soil Moisture Content and Bulk Density
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-025A	CFMW-032A	CFMW-032A	CFMW-032A	CFMW-045A	CFMW-045A	CFMW-059A
Sample Depth (ft bls):		90 - 91	198 - 199	65 - 66	94 - 95	281 - 282	95 - 96	150 - 151
Sample Designation:		CFMW-025A-SO-90-91-GSA	CFMW-032A-SO-198-199-GSA	CFMW-032A-SO-65-66-GSA	CFMW-032A-SO-94-95-GSA	CFMW-045A-SO-281-282-GSA	CFMW-045A-SO-95-96-GSA	CFMW-059A-SO-150-151-GSA
Parameter	Unit							
Moisture Content	percent	12.6	14.2	19.3	11.4	8.3	28.6	9.8
In Place Density	g/cc	1.92	1.72	1.5	1.53	1.58	1.43	1.99

Preliminary - Under EPA and MDEQ Review

Table S2. Soil Moisture Content and Bulk Density
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location:		CFMW-059A	CFMW-059A
Sample Depth (ft bls):		160 - 161	85 - 86
Sample Designation:		CFMW-059A-SO-160-161-GSA	CFMW-059A-SO-85-86-GSA
Parameter	Unit		
Moisture Content	percent	8.8	23.3
In Place Density	g/cc	1.84	1.35

Preliminary - Under EPA and MDEQ Review

APPENDIX T

Groundwater Laboratory Analytical Data Tables

1. VOCs in Groundwater
2. SVOCs in Groundwater
3. Metals in Groundwater
4. General Chemistry in Groundwater

Preliminary - Under EPA and MDEQ Review

Table T1. Volatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-002 Sample Date: 9/12/2016 Sample Designation: CFMW-002-GW Sample Type: N	CFMW-003 9/14/2016 CFMW-003-GW N	CFMW-007 9/21/2016 CFMW-007-GW N	CFMW-008a 9/15/2016 CFMW-008a-GW N	CFMW-010 9/12/2016 CFMW-010-GW N	CFMW-011 9/13/2016 CFMW-011-GW N	CFMW-012 9/12/2016 CFMW-012-GW N	CFMW-014 9/12/2016 CFMW-014-GW N	CFMW-015 9/12/2016 CFMW-015-GW N	CFMW-019 9/12/2016 CFMW-019-GW N	CFMW-020 9/20/2016 CFMW-020-GW N
1,1,1-Trichloroethane	200	200	800	ug/l	0.28 U	3.8	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
1,1,2,2-Tetrachloroethane	2	--	--	ug/l	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 UJ	0.19 U	0.19 UJ	0.19 U	0.19 U	0.19 UJ	0.19 U
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	5500	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	3	--	--	ug/l	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
1,1-Dichloroethane	4	--	2.8	ug/l	0.24 U	0.71 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1-Dichloroethene	7	--	--	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,2,3-Trichlorobenzene	0.7	--	0.7	ug/l	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,2,4-Trichlorobenzene	70	--	0.4	ug/l	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dibromo-3-Chloropropane	0.2	0.2	0.00033	ug/l	0.23 U	0.23 U	0.23 UJ	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorobenzene	600	600	30	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
1,2-Dichloroethane	4	5	0.17	ug/l	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	5	5	0.44	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
1,3-Dichlorobenzene	600	--	--	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1,4-Dichlorobenzene	75	75	0.48	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Butanone (MEK)	--	--	560	ug/l	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
2-Hexanone	--	--	3.8	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U
4-Methyl-2-pentanone (MIBK)	--	--	630	ug/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Acetone	--	--	1400	ug/l	1.1 U	1.1 U	1.1 U	8.3	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Benzene	5	5	0.46	ug/l	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Bromoform	80	80	3.3	ug/l	0.18 U	0.18 U	0.18 UJ	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromomethane	10	--	0.75	ug/l	0.18 UJ	0.18 U	0.18 U	0.18 U	0.18 UJ	0.18 UJ	0.18 UJ	0.18 U	0.18 U	0.18 UJ	0.18 UJ
Carbon disulfide	--	--	81	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Carbon tetrachloride	3	5	0.46	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	100	100	7.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chlorobromomethane	--	--	8.3	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorodibromomethane	4	80	0.87	ug/l	0.22 U	0.22 U	0.22 UJ	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloroethane	--	--	2100	ug/l	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Chloroform	70	80	0.22	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloromethane	30	--	19	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
cis-1,2-Dichloroethene	70	--	--	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
cis-1,3-Dichloropropene	4	--	--	ug/l	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	--	--	1300	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Dichlorobromomethane	10	80	0.13	ug/l	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Dichlorodifluoromethane	1000	--	20	ug/l	0.14 UJ	0.14 U	0.14 U	0.14 U	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 U
Ethylbenzene	700	700	1.5	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylene Dibromide	0.004	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Isopropylbenzene	--	--	--	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Methyl acetate	--	--	2000	ug/l	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Methyl tert-butyl ether	30	--	14	ug/l	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Methylcyclohexane	--	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Methylene Chloride	5	5	11	ug/l	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
m-Xylene & p-Xylene	--	--	--	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
o-Xylene	10000	--	19	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Styrene	100	100	120	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Tetrachloroethene	5	--	--	ug/l	0.12 U	0.38 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.56 J+	0.12 U
Toluene	1000	1000	110	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-Dichloroethene	100	--	--	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
trans-1,3-Dichloropropene	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Trichloroethene	5	--	--	ug/l	0.22 U	0.76 J	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Trichlorofluoromethane	10000	--	520	ug/l	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Vinyl chloride	0.2	2	0.019	ug/l	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T1. Volatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	Based Screening Level Tapwater RSL	Unit	Sample Location: / Sample Date: / Sample Designation: / Sample Type: CFMW-021 12 Sep 2016 CFMW-021-GW N	CFMW-022 9/13/2016 CFMW-022-GW N	CFMW-023 9/21/2016 CFMW-023-GW N	CFMW-025b 9/13/2016 CFMW-025b-GW N	CFMW-026 9/13/2016 CFMW-026-GW N	CFMW-027 9/13/2016 CFMW-027-GW N	CFMW-028 9/13/2016 CFMW-028-GW N	CFMW-029 9/13/2016 CFMW-029-GW N	CFMW-029 9/13/2016 CFMW-DUP1-GW FD	CFMW-031 9/15/2016 CFMW-031-GW N	CFMW-032 9/15/2016 CFMW-032-GW N
1,1,1-Trichloroethane	200	200	800	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
1,1,2,2-Tetrachloroethane	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	5500	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	3	--	--	ug/l	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
1,1-Dichloroethane	4	--	2.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1-Dichloroethene	7	--	--	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,2,3-Trichlorobenzene	0.7	--	0.7	ug/l	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,2,4-Trichlorobenzene	70	--	0.4	ug/l	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dibromo-3-Chloropropane	0.2	0.2	0.00033	ug/l	0.23 U	0.23 U	0.23 UJ	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorobenzene	600	600	30	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
1,2-Dichloroethane	4	5	0.17	ug/l	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	5	5	0.44	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
1,3-Dichlorobenzene	600	--	--	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1,4-Dichlorobenzene	75	75	0.48	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Butanone (MEK)	--	--	560	ug/l	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
2-Hexanone	--	--	3.8	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U
4-Methyl-2-pentanone (MIBK)	--	--	630	ug/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Acetone	--	--	1400	ug/l	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Benzene	5	5	0.46	ug/l	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Bromoform	80	80	3.3	ug/l	0.18 U	0.18 U	0.18 UJ	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromomethane	10	--	0.75	ug/l	0.18 U	0.18 UJ	0.18 U	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 U	0.18 U
Carbon disulfide	--	--	81	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Carbon tetrachloride	3	5	0.46	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	100	100	7.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chlorobromomethane	--	--	8.3	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorodibromomethane	4	80	0.87	ug/l	0.22 U	0.22 U	0.22 UJ	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloroethane	--	--	2100	ug/l	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Chloroform	70	80	0.22	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloromethane	30	--	19	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
cis-1,2-Dichloroethene	70	--	--	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
cis-1,3-Dichloropropene	4	--	--	ug/l	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	--	--	1300	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Dichlorobromomethane	10	80	0.13	ug/l	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Dichlorodifluoromethane	1000	--	20	ug/l	0.14 UJ	0.14 UJ	0.14 U	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 U	0.14 U
Ethylbenzene	700	700	1.5	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylene Dibromide	0.004	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Isopropylbenzene	--	--	--	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Methyl acetate	--	--	2000	ug/l	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Methyl tert-butyl ether	30	--	14	ug/l	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Methylcyclohexane	--	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Methylene Chloride	5	5	11	ug/l	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
m-Xylene & p-Xylene	--	--	--	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
o-Xylene	10000	--	19	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Styrene	100	100	120	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Tetrachloroethene	5	--	--	ug/l	0.18 J	0.12 U	0.12 U	0.12 U	0.12 U	0.21 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Toluene	1000	1000	110	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-Dichloroethene	100	--	--	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
trans-1,3-Dichloropropene	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Trichloroethene	5	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Trichlorofluoromethane	10000	--	520	ug/l	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Vinyl chloride	0.2	2	0.019	ug/l	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under ED and MDEQ Review

Table T1. Volatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	Based Screening Level Tapwater RSL	Unit	Sample Location: / Sample Date: / Sample Designation: / Sample Type: CFMW-033 9/15/2016 CFMW-033-GW N	CFMW-034 9/14/2016 CFMW-034-GW N	CFMW-035 9/14/2016 CFMW-035-GW N	CFMW-037 9/16/2016 CFMW-037-GW N	CFMW-038 9/14/2016 CFMW-038-GW N	CFMW-040 9/14/2016 CFMW-040-GW N	CFMW-042 9/14/2016 CFMW-042-GW N	CFMW-043 9/13/2016 CFMW-043-GW N	CFMW-044 9/15/2016 CFMW-044-GW N	CFMW-044b 9/19/2016 CFMW-044b-GW N	CFMW-045 9/15/2016 CFMW-045-GW N
1,1,1-Trichloroethane	200	200	800	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
1,1,2,2-Tetrachloroethane	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	5500	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	3	--	--	ug/l	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
1,1-Dichloroethane	4	--	2.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1-Dichloroethene	7	--	--	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,2,3-Trichlorobenzene	0.7	--	0.7	ug/l	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,2,4-Trichlorobenzene	70	--	0.4	ug/l	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dibromo-3-Chloropropane	0.2	0.2	0.00033	ug/l	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorobenzene	600	600	30	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
1,2-Dichloroethane	4	5	0.17	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.28 J	0.25 U
1,2-Dichloropropane	5	5	0.44	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
1,3-Dichlorobenzene	600	--	--	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1,4-Dichlorobenzene	75	75	0.48	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Butanone (MEK)	--	--	560	ug/l	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
2-Hexanone	--	--	3.8	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U
4-Methyl-2-pentanone (MIBK)	--	--	630	ug/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Acetone	--	--	1400	ug/l	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Benzene	5	5	0.46	ug/l	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Bromoform	80	80	3.3	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromomethane	10	--	0.75	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 UJ	0.18 U	0.18 U	0.18 U
Carbon disulfide	--	--	81	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Carbon tetrachloride	3	5	0.46	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	100	100	7.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chlorobromomethane	--	--	8.3	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorodibromomethane	4	80	0.87	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloroethane	--	--	2100	ug/l	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 UJ	0.37 U
Chloroform	70	80	0.22	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloromethane	30	--	19	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
cis-1,2-Dichloroethene	70	--	--	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
cis-1,3-Dichloropropene	4	--	--	ug/l	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	--	--	1300	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Dichlorobromomethane	10	80	0.13	ug/l	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Dichlorodifluoromethane	1000	--	20	ug/l	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 UJ	0.14 U	3.1	0.14 U
Ethylbenzene	700	700	1.5	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylene Dibromide	0.004	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Isopropylbenzene	--	--	--	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Methyl acetate	--	--	2000	ug/l	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Methyl tert-butyl ether	30	--	14	ug/l	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Methylcyclohexane	--	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Methylene Chloride	5	5	11	ug/l	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
m-Xylene & p-Xylene	--	--	--	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
o-Xylene	10000	--	19	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Styrene	100	100	120	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Tetrachloroethene	5	--	--	ug/l	0.16 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Toluene	1000	1000	110	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-Dichloroethene	100	--	--	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
trans-1,3-Dichloropropene	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Trichloroethene	5	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Trichlorofluoromethane	10000	--	520	ug/l	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Vinyl chloride	0.2	2	0.019	ug/l	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T1. Volatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	Based Screening Level Tapwater RSL	Unit	CFMW-047 9/14/2016 CFMW-047-GW N	CFMW-049 9/21/2016 CFMW-049-GW N	CFMW-050 9/19/2016 CFMW-050-GW N	CFMW-053 9/14/2016 CFMW-053-GW N	CFMW-054 9/14/2016 CFMW-054-GW N	CFMW-061 9/15/2016 CFMW-061-GW N	CFMW-064 9/15/2016 CFMW-064-GW N
1,1,1-Trichloroethane	200	200	800	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
1,1,2,2-Tetrachloroethane	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	5500	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	3	--	--	ug/l	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
1,1-Dichloroethane	4	--	2.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1-Dichloroethene	7	--	--	ug/l	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,2,3-Trichlorobenzene	0.7	--	0.7	ug/l	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,2,4-Trichlorobenzene	70	--	0.4	ug/l	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dibromo-3-Chloropropane	0.2	0.2	0.00033	ug/l	0.23 U	0.23 UJ	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorobenzene	600	600	30	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
1,2-Dichloroethane	4	5	0.17	ug/l	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	5	5	0.44	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
1,3-Dichlorobenzene	600	--	--	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1,4-Dichlorobenzene	75	75	0.48	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Butanone (MEK)	--	--	560	ug/l	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
2-Hexanone	--	--	3.8	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U
4-Methyl-2-pentanone (MIBK)	--	--	630	ug/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Acetone	--	--	1400	ug/l	10	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Benzene	5	5	0.46	ug/l	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Bromoform	80	80	3.3	ug/l	0.18 U	0.18 UJ	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromomethane	10	--	0.75	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Carbon disulfide	--	--	81	ug/l	3	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Carbon tetrachloride	3	5	0.46	ug/l	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	100	100	7.8	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chlorobromomethane	--	--	8.3	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorodibromomethane	4	80	0.87	ug/l	0.22 U	0.22 UJ	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloroethane	--	--	2100	ug/l	0.37 U	0.37 U	0.37 UJ	0.37 U	0.37 U	0.37 U	0.37 U
Chloroform	70	80	0.22	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chloromethane	30	--	19	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
cis-1,2-Dichloroethene	70	--	--	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
cis-1,3-Dichloropropene	4	--	--	ug/l	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	--	--	1300	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Dichlorobromomethane	10	80	0.13	ug/l	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Dichlorodifluoromethane	1000	--	20	ug/l	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Ethylbenzene	700	700	1.5	ug/l	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylene Dibromide	0.004	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Isopropylbenzene	--	--	--	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Methyl acetate	--	--	2000	ug/l	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Methyl tert-butyl ether	30	--	14	ug/l	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Methylcyclohexane	--	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Methylene Chloride	5	5	11	ug/l	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
m-Xylene & p-Xylene	--	--	--	ug/l	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
o-Xylene	10000	--	19	ug/l	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Styrene	100	100	120	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Tetrachloroethene	5	--	--	ug/l	0.12 U	0.12 U	0.14 J	0.12 U	0.12 U	0.12 U	0.12 U
Toluene	1000	1000	110	ug/l	2.2	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,2-Dichloroethene	100	--	--	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
trans-1,3-Dichloropropene	2	--	--	ug/l	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Trichloroethene	5	--	--	ug/l	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Trichlorofluoromethane	10000	--	520	ug/l	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Vinyl chloride	0.2	2	0.019	ug/l	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-002 Sample Date: 9/12/2016 Sample Designation: CFMW-002-GW Sample Type: N	CFMW-003 9/14/2016 CFMW-003-GW N	CFMW-007 9/21/2016 CFMW-007-GW N	CFMW-008a 9/15/2016 CFMW-008a-GW N	CFMW-010 9/12/2016 CFMW-010-GW N	CFMW-011 9/13/2016 CFMW-011-GW N	CFMW-012 9/12/2016 CFMW-012-GW N	CFMW-014 9/12/2016 CFMW-014-GW N	CFMW-015 9/12/2016 CFMW-015-GW N	CFMW-019 9/12/2016 CFMW-019-GW N
1,1'-Biphenyl	--	--	0.083	ug/l	0.63 U	0.66 U	0.63 U	0.63 U	0.63 U	0.66 U	0.63 U	0.68 U	0.63 U	0.63 U
1,2,4,5-Tetrachlorobenzene	0.97	--	0.17	ug/l	0.43 U	0.45 U	0.43 U	0.43 U	0.43 U	0.45 U	0.43 U	0.47 U	0.43 U	0.43 U
1,4-Dioxane	--	--	0.46	ug/l	3.1 U	3.3 U	3.1 UJ	3.1 U	3.1 U	3.2 U	3.1 U	3.4 U	3.1 U	3.1 U
2,2'-oxybis[1-chloropropane]	1400	--	--	ug/l	0.93 U	0.97 U	0.93 U	0.93 U	0.93 U	0.97 U	0.93 U	1 U	0.93 U	0.93 U
2,3,4,6-Tetrachlorophenol	--	--	24	ug/l	0.69 U	0.72 U	0.69 U	0.69 U	0.69 U	0.72 U	0.69 U	0.75 U	0.69 U	0.69 U
2,4,5-Trichlorophenol	1800	--	120	ug/l	0.49 U	0.51 U	0.49 U	0.49 U	0.49 U	0.51 U	0.49 U	0.53 U	0.49 U	0.49 U
2,4,6-Trichlorophenol	30	--	1.2	ug/l	0.53 U	0.55 U	0.53 U	0.53 U	0.53 U	0.55 U	0.53 U	0.58 U	0.53 U	0.53 U
2,4-Dichlorophenol	77	--	4.6	ug/l	0.63 U	0.66 U	0.63 U	0.63 U	0.63 U	0.66 U	0.63 U	0.68 U	0.63 U	0.63 U
2,4-Dimethylphenol	380	--	36	ug/l	0.91 U	0.95 U	0.91 U	0.91 U	0.91 U	0.95 U	0.91 U	0.99 U	0.91 U	0.91 U
2,4-Dinitrophenol	69	--	3.9	ug/l	2.4 U	2.5 UJ	2.4 U	2.4 U	2.4 U	2.5 UJ	2.4 U	2.6 U	2.4 U	2.4 U
2,4-Dinitrotoluene	1.1	--	0.24	ug/l	1 U	1.1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1 U	1 U
2,6-Dinitrotoluene	0.5	--	0.049	ug/l	0.88 U	0.92 U	0.88 U	0.88 U	0.88 U	0.92 U	0.88 U	0.96 U	0.88 U	0.88 U
2-Chloronaphthalene	1000	--	--	ug/l	0.61 U	0.64 U	0.61 U	0.61 U	0.61 U	0.64 U	0.61 U	0.66 U	0.61 U	0.61 U
2-Chlorophenol	81	--	9.1	ug/l	0.74 U	0.77 U	0.74 U	0.74 U	0.74 U	0.77 U	0.74 U	0.8 U	0.74 U	0.74 U
2-Methylnaphthalene	--	--	3.6	ug/l	0.88 U	0.92 U	0.88 U	0.88 U	0.88 U	0.92 U	0.88 U	0.96 U	0.88 U	0.88 U
2-Methylphenol	--	--	--	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.4 U	1.3 U	1.3 U
2-Nitroaniline	--	--	19	ug/l	0.65 U	0.68 UJ	0.65 U	0.65 UJ	0.65 U	0.68 U	0.65 U	0.71 U	0.65 U	0.65 U
2-Nitrophenol	--	--	--	ug/l	0.59 U	0.62 U	0.59 U	0.59 U	0.59 U	0.61 U	0.59 U	0.64 U	0.59 U	0.59 U
3 & 4 Methylphenol	--	--	--	ug/l	0.88 U	0.92 UJ	0.88 U	0.88 UJ	0.88 U	0.92 U	0.88 U	0.96 U	0.88 UJ	0.88 U
3,3'-Dichlorobenzidine	0.21	--	0.13	ug/l	1 U	1.1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1 U	1 U
3-Nitroaniline	--	--	--	ug/l	0.82 U	0.86 U	0.82 U	0.82 U	0.82 U	0.85 U	0.82 U	0.89 U	0.82 U	0.82 U
4,6-Dinitro-2-methylphenol	13	--	--	ug/l	2 U	2.1 U	2 U	2 U	2 U	2.1 U	2 U	2.2 U	2 U	2 U
4-Bromophenyl phenyl ether	--	--	--	ug/l	1 U	1.1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1 U	1 U
4-Chloro-3-methylphenol	3000	--	--	ug/l	0.76 U	0.79 U	0.76 U	0.76 U	0.76 U	0.79 U	0.76 U	0.83 U	0.76 U	0.76 U
4-Chloroaniline	--	--	0.37	ug/l	0.73 U	0.76 U	0.73 U	0.73 U	0.73 U	0.76 U	0.73 U	0.79 U	0.73 U	0.73 U
4-Chlorophenyl phenyl ether	--	--	--	ug/l	0.96 U	1 U	0.96 U	0.96 U	0.96 U	1 U	0.96 U	1 U	0.96 U	0.96 U
4-Nitroaniline	--	--	3.8	ug/l	0.48 U	0.5 U	0.48 U	0.48 U	0.48 U	0.5 U	0.48 U	0.52 U	0.48 U	0.48 U
4-Nitrophenol	60	--	--	ug/l	4.7 U	4.9 U	4.7 U	4.7 U	4.7 U	4.8 U	4.7 U	5.1 U	4.7 U	4.7 U
Acenaphthene	670	--	53	ug/l	0.88 U	0.92 U	0.88 U	0.88 U	0.88 U	0.92 U	0.88 U	0.96 U	0.88 U	0.88 U
Acenaphthylene	--	--	--	ug/l	0.65 U	0.68 U	0.65 U	0.65 U	0.65 U	0.68 U	0.65 U	0.71 U	0.65 U	0.65 U
Acetophenone	--	--	190	ug/l	1 U	1.1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1 U	1 U
Anthracene	2100	--	180	ug/l	0.57 U	0.6 U	0.57 U	0.57 U	0.57 U	0.59 U	0.57 U	0.62 U	0.57 U	0.57 U
Atrazine	3	3	0.3	ug/l	0.77 U	0.81 U	0.77 U	0.77 U	0.77 U	0.8 U	0.77 U	0.84 U	0.77 U	0.77 U
Benzaldehyde	--	--	190	ug/l	0.86 U	0.9 U	0.86 U	0.86 U	0.86 U	0.9 U	0.86 U	0.93 U	0.86 U	0.86 U
Benzo[a]anthracene	0.5	--	--	ug/l	0.55 U	0.58 U	0.55 U	0.55 U	0.55 U	0.57 U	0.55 U	0.6 U	0.55 U	0.55 U
Benzo[a]pyrene	0.05	0.2	0.0034	ug/l	0.16 U	0.17 U	0.16 U	0.16 U	0.16 U	0.17 U	0.16 U	0.17 U	0.16 U	0.16 U
Benzo[b]fluoranthene	0.5	--	0.034	ug/l	0.44 U	0.46 U	0.44 U	0.44 U	0.44 U	0.46 U	0.44 U	0.48 U	0.44 U	0.44 U
Benzo[g,h,i]perylene	--	--	--	ug/l	0.75 U	0.78 U	0.75 U	0.75 U	0.75 U	0.78 U	0.75 U	0.82 U	0.75 U	0.75 U
Benzo[k]fluoranthene	5	--	0.34	ug/l	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.2 U	0.18 U	0.18 U
Bis(2-chloroethoxy)methane	--	--	5.9	ug/l	0.69 U	0.72 U	0.69 U	0.69 U	0.69 U	0.72 U	0.69 U	0.75 U	0.69 U	0.69 U
Bis(2-chloroethyl)ether	0.3	--	0.014	ug/l	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.13 U	0.12 U	0.12 U
Bis(2-ethylhexyl) phthalate	6	6	5.6	ug/l	0.72 U	0.75 U	0.72 U	1.1 J	0.72 U	0.75 U	0.72 U	0.78 U	0.72 U	0.72 U
Butyl benzyl phthalate	1500	--	16	ug/l	0.6 U	0.63 U	0.6 U	0.6 U	0.6 U	0.63 U	0.6 U	0.65 U	0.6 U	0.6 U
Caprolactam	--	--	990	ug/l	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbazole	--	--	--	ug/l	0.85 U	0.89 U	0.85 U	0.85 U	0.85 U	0.89 U	0.85 U	0.92 U	0.85 U	0.85 U
Chrysene	50	--	3.4	ug/l	0.67 U	0.7 U	0.67 U	0.67 U	0.67 U	0.7 U	0.67 U	0.73 U	0.67 U	0.67 U
Dibenz(a,h)anthracene	0.05	--	0.0034	ug/l	0.09 U	0.094 U	0.09 U	0.09 U	0.09 U	0.094 U	0.09 U	0.098 U	0.09 U	0.09 U
Dibenzofuran	--	--	0.79	ug/l	0.85 U	0.89 U	0.85 U	0.85 U	0.85 U	0.89 U	0.85 U	0.92 U	0.85 U	0.85 U

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Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFMW-002	CFMW-003	CFMW-007	CFMW-008a	CFMW-010	CFMW-011	CFMW-012	CFMW-014	CFMW-015	CFMW-019
					Sample Date:	9/12/2016	9/14/2016	9/21/2016	9/15/2016	9/12/2016	9/13/2016	9/12/2016	9/12/2016	9/12/2016	9/12/2016
					Sample Designation:	CFMW-002-GW	CFMW-003-GW	CFMW-007-GW	CFMW-008a-GW	CFMW-010-GW	CFMW-011-GW	CFMW-012-GW	CFMW-014-GW	CFMW-015-GW	CFMW-019-GW
					Sample Type:	N	N	N	N	N	N	N	N	N	N
Diethyl phthalate	17000	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1 U	1 U
Dimethyl phthalate	270000	--	--	ug/l	0.98 U	1 U	0.98 U	0.98 U	0.98 U	1 U	0.98 U	1.1 U	0.98 U	0.98 U
Di-n-butyl phthalate	2000	--	--	ug/l	0.82 U	0.86 U	0.82 U	0.82 U	0.82 U	0.85 U	0.82 U	0.89 U	0.82 U	0.82 U
Di-n-octyl phthalate	--	--	20	ug/l	0.69 U	0.72 U	0.69 U	0.69 U	0.69 U	0.72 U	0.69 U	0.75 U	0.69 U	0.69 U
Fluoranthene	130	--	80	ug/l	0.72 U	0.75 U	0.72 U	0.72 U	0.72 U	0.75 U	0.72 U	0.78 U	0.72 U	0.72 U
Fluorene	1100	--	29	ug/l	0.8 U	0.84 U	0.8 U	0.8 U	0.8 U	0.83 U	0.8 U	0.87 U	0.8 U	0.8 U
Hexachlorobenzene	0.2	1	0.0098	ug/l	0.47 U	0.49 U	0.47 U	0.47 U	0.47 U	0.49 U	0.47 U	0.51 U	0.47 U	0.47 U
Hexachlorobutadiene	5	--	0.14	ug/l	0.76 U	0.79 U	0.76 U	0.76 U	0.76 U	0.79 U	0.76 U	0.83 U	0.76 U	0.76 U
Hexachlorocyclopentadiene	50	50	0.041	ug/l	0.61 U	0.64 U	0.61 U	0.61 U	0.61 U	0.64 U	0.61 U	0.66 U	0.61 U	0.61 U
Hexachloroethane	30	--	0.33	ug/l	0.09 U	0.094 U	0.09 U	0.09 U	0.09 U	0.094 U	0.09 U	0.098 U	0.09 U	0.09 U
Indeno[1,2,3-cd]pyrene	0.5	--	0.034	ug/l	0.21 U	0.22 U	0.21 U	0.21 U	0.21 U	0.22 U	0.21 U	0.23 U	0.21 U	0.21 U
Isophorone	400	--	78	ug/l	0.67 U	0.7 U	0.67 U	0.67 U	0.67 U	0.7 U	0.67 U	0.73 U	0.67 U	0.67 U
Naphthalene	100	--	0.17	ug/l	0.8 U	0.84 U	0.8 U	0.8 U	0.8 U	0.83 U	0.8 U	0.87 U	0.8 U	0.8 U
Nitrobenzene	17	--	0.14	ug/l	0.49 U	0.51 U	0.49 U	0.49 U	0.49 U	0.51 U	0.49 U	0.53 U	0.49 U	0.49 U
N-Nitrosodi-n-propylamine	0.5	--	0.011	ug/l	0.83 U	0.87 UJ	0.83 U	0.83 UJ	0.83 U	0.86 U	0.83 U	0.9 U	0.83 U	0.83 U
N-Nitrosodiphenylamine	33	--	12	ug/l	0.74 U	0.77 U	0.74 U	0.74 U	0.74 U	0.77 U	0.74 U	0.8 U	0.74 U	0.74 U
Pentachlorophenol	1	1	0.041	ug/l	2.2 U	2.3 R	2.2 U	2.2 U	2.2 U	2.3 R	2.2 U	2.4 U	2.2 U	2.2 U
Phenanthrene	--	--	--	ug/l	0.65 U	0.68 U	0.65 U	0.65 U	0.65 U	0.68 U	0.65 U	0.71 U	0.65 U	0.65 U
Phenol	300	--	580	ug/l	0.41 U	0.43 U	0.41 U	0.41 U	0.41 U	0.43 U	0.41 U	0.45 U	0.41 U	0.41 U
Pyrene	830	--	12	ug/l	0.83 U	0.87 U	0.83 U	0.83 U	0.83 U	0.86 U	0.83 U	0.9 U	0.83 U	0.83 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-020 Sample Date: 9/20/2016 Sample Designation: CFMW-020-GW Sample Type: N	CFMW-021 9/12/2016 CFMW-021-GW N	CFMW-022 9/13/2016 CFMW-022-GW N	CFMW-023 9/21/2016 CFMW-023-GW N	CFMW-025b 9/13/2016 CFMW-025b-GW N	CFMW-026 9/13/2016 CFMW-026-GW N	CFMW-027 9/13/2016 CFMW-027-GW N	CFMW-028 9/13/2016 CFMW-028-GW N	CFMW-029 9/13/2016 CFMW-029-GW N	CFMW-029 9/13/2016 CFMW-DUP1-GW FD
1,1'-Biphenyl	--	--	0.083	ug/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.64 U	0.63 U	0.66 U	0.66 U
1,2,4,5-Tetrachlorobenzene	0.97	--	0.17	ug/l	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.44 U	0.43 U	0.45 U	0.45 U
1,4-Dioxane	--	--	0.46	ug/l	3.1 U	3.1 U	3.1 U	3.1 UJ	3.1 U	3.1 U	3.2 U	3.1 U	3.2 U	3.2 U
2,2'-oxybis[1-chloropropane]	1400	--	--	ug/l	0.93 U	0.93 U	0.93 U	0.93 U	0.93 U	0.93 U	0.95 U	0.93 U	0.97 U	0.97 U
2,3,4,6-Tetrachlorophenol	--	--	24	ug/l	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U	0.72 U	0.72 U
2,4,5-Trichlorophenol	1800	--	120	ug/l	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.5 U	0.49 U	0.51 U	0.51 U
2,4,6-Trichlorophenol	30	--	1.2	ug/l	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.54 U	0.53 U	0.55 U	0.55 U
2,4-Dichlorophenol	77	--	4.6	ug/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.64 U	0.63 U	0.66 U	0.66 U
2,4-Dimethylphenol	380	--	36	ug/l	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.91 U	0.93 U	0.91 U	0.95 U	0.95 U
2,4-Dinitrophenol	69	--	3.9	ug/l	2.4 U	2.4 U	2.4 UJ	2.4 U	2.4 UJ	2.4 UJ	2.4 UJ	2.4 UJ	2.5 UJ	2.5 UJ
2,4-Dinitrotoluene	1.1	--	0.24	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1.1 U
2,6-Dinitrotoluene	0.5	--	0.049	ug/l	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.92 U	0.92 U
2-Chloronaphthalene	1000	--	--	ug/l	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.62 U	0.61 U	0.64 U	0.64 U
2-Chlorophenol	81	--	9.1	ug/l	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.76 U	0.74 U	0.77 U	0.77 U
2-Methylnaphthalene	--	--	3.6	ug/l	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.92 U	0.92 U
2-Methylphenol	--	--	--	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2-Nitroaniline	--	--	19	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.66 U	0.65 U	0.68 U	0.68 U
2-Nitrophenol	--	--	--	ug/l	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.6 U	0.59 U	0.61 U	0.61 U
3 & 4 Methylphenol	--	--	--	ug/l	0.88 U	0.88 UJ	0.88 U	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.92 U	0.92 U
3,3'-Dichlorobenzidine	0.21	--	0.13	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1.1 U
3-Nitroaniline	--	--	--	ug/l	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.84 U	0.82 U	0.85 U	0.85 U
4,6-Dinitro-2-methylphenol	13	--	--	ug/l	2 U	2 U	2 U	2.2 J	2 U	2 U	2.1 U	2 U	2.1 U	2.1 U
4-Bromophenyl phenyl ether	--	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1.1 U
4-Chloro-3-methylphenol	3000	--	--	ug/l	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.78 U	0.76 U	0.79 U	0.79 U
4-Chloroaniline	--	--	0.37	ug/l	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.74 U	0.73 U	0.76 U	0.76 U
4-Chlorophenyl phenyl ether	--	--	--	ug/l	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.98 U	0.96 U	1 U	1 U
4-Nitroaniline	--	--	3.8	ug/l	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U	0.48 U	0.5 U	0.5 U
4-Nitrophenol	60	--	--	ug/l	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.8 U	4.8 U
Acenaphthene	670	--	53	ug/l	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.92 U	0.92 U
Acenaphthylene	--	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.66 U	0.65 U	0.68 U	0.68 U
Acetophenone	--	--	190	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1 U	1.1 U	1.1 U
Anthracene	2100	--	180	ug/l	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.58 U	0.57 U	0.59 U	0.59 U
Atrazine	3	3	0.3	ug/l	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.79 U	0.77 U	0.8 U	0.8 U
Benzaldehyde	--	--	190	ug/l	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.88 U	0.86 U	0.9 U	0.9 U
Benzo[a]anthracene	0.5	--	--	ug/l	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.56 U	0.55 U	0.57 U	0.57 U
Benzo[a]pyrene	0.05	0.2	0.0034	ug/l	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.17 U	0.17 U
Benzo[b]fluoranthene	0.5	--	0.034	ug/l	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.45 U	0.44 U	0.46 U	0.46 U
Benzo[g,h,i]perylene	--	--	--	ug/l	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.77 U	0.75 U	0.78 U	0.78 U
Benzo[k]fluoranthene	5	--	0.34	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.19 U	0.19 U
Bis(2-chloroethoxy)methane	--	--	5.9	ug/l	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U	0.72 U	0.72 U
Bis(2-chloroethyl)ether	0.3	--	0.014	ug/l	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.13 U
Bis(2-ethylhexyl) phthalate	6	6	5.6	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.73 U	0.72 U	0.75 U	0.75 U
Butyl benzyl phthalate	1500	--	16	ug/l	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.61 U	0.6 U	0.63 U	0.63 U
Caprolactam	--	--	990	ug/l	1.1 U	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbazole	--	--	--	ug/l	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.87 U	0.85 U	0.89 U	0.89 U
Chrysene	50	--	3.4	ug/l	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.68 U	0.67 U	0.7 U	0.7 U
Dibenz(a,h)anthracene	0.05	--	0.0034	ug/l	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.092 U	0.09 U	0.094 U	0.094 U
Dibenzofuran	--	--	0.79	ug/l	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.87 U	0.85 U	0.89 U	0.89 U

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Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFMW-020	CFMW-021	CFMW-022	CFMW-023	CFMW-025b	CFMW-026	CFMW-027	CFMW-028	CFMW-029	CFMW-029
					Sample Date:	9/20/2016	9/12/2016	9/13/2016	9/21/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016
					Sample Designation:	CFMW-020-GW	CFMW-021-GW	CFMW-022-GW	CFMW-023-GW	CFMW-025b-GW	CFMW-026-GW	CFMW-027-GW	CFMW-028-GW	CFMW-029-GW	CFMW-DUP1-GW
					Sample Type:	N	N	N	N	N	N	N	N	N	FD
Diethyl phthalate	17000	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dimethyl phthalate	270000	--	--	ug/l	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	0.98 U	1 U	0.98 U	1 U	1 U
Di-n-butyl phthalate	2000	--	--	ug/l	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.84 U	0.82 U	0.85 U	0.85 U
Di-n-octyl phthalate	--	--	20	ug/l	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U	0.72 U	0.72 U
Fluoranthene	130	--	80	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.73 U	0.72 U	0.75 U	0.75 U
Fluorene	1100	--	29	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.82 U	0.8 U	0.83 U	0.83 U
Hexachlorobenzene	0.2	1	0.0098	ug/l	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.48 U	0.47 U	0.49 U	0.49 U
Hexachlorobutadiene	5	--	0.14	ug/l	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.78 U	0.76 U	0.79 U	0.79 U
Hexachlorocyclopentadiene	50	50	0.041	ug/l	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.62 U	0.61 U	0.64 U	0.64 U
Hexachloroethane	30	--	0.33	ug/l	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.092 U	0.09 U	0.094 U	0.094 U
Indeno[1,2,3-cd]pyrene	0.5	--	0.034	ug/l	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.22 U	0.22 U
Isophorone	400	--	78	ug/l	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.68 U	0.67 U	0.7 U	0.7 U
Naphthalene	100	--	0.17	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.82 U	0.8 U	0.83 U	0.83 U
Nitrobenzene	17	--	0.14	ug/l	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.5 U	0.49 U	0.51 U	0.51 U
N-Nitrosodi-n-propylamine	0.5	--	0.011	ug/l	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.85 U	0.83 U	0.86 U	0.86 U
N-Nitrosodiphenylamine	33	--	12	ug/l	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.76 U	0.74 U	0.77 U	0.77 U
Pentachlorophenol	1	1	0.041	ug/l	2.2 U	2.2 U	2.2 R	2.2 U	2.2 R	2.2 R	2.2 R	2.2 R	2.3 R	2.3 R
Phenanthrene	--	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.66 U	0.65 U	0.68 U	0.68 U
Phenol	300	--	580	ug/l	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.43 U	0.43 U
Pyrene	830	--	12	ug/l	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.85 U	0.83 U	0.86 U	0.86 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MC
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

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Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-031 Sample Date: 9/15/2016 Sample Designation: CFMW-031-GW Sample Type: N	CFMW-032 9/15/2016 CFMW-032-GW N	CFMW-033 15 Sep 2016 CFMW-033-GW N	CFMW-034 9/14/2016 CFMW-034-GW N	CFMW-035 9/14/2016 CFMW-035-GW N	CFMW-037 9/16/2016 CFMW-037-GW N	CFMW-038 9/14/2016 CFMW-038-GW N	CFMW-040 9/14/2016 CFMW-040-GW N	CFMW-042 9/14/2016 CFMW-042-GW N	CFMW-043 9/13/2016 CFMW-043-GW N
1,1'-Biphenyl	--	--	0.083	ug/l	0.63 U	0.63 U	0.63 U	0.66 U	0.63 U	0.63 U	0.66 U	0.64 U	0.66 U	0.67 U
1,2,4,5-Tetrachlorobenzene	0.97	--	0.17	ug/l	0.43 U	0.43 U	0.43 U	0.45 U	0.43 U	0.43 U	0.45 U	0.44 U	0.45 U	0.46 U
1,4-Dioxane	--	--	0.46	ug/l	3.1 U	3.1 U	3.1 U	3.3 U	3.1 U	3.1 U	3.2 U	3.2 U	3.2 U	3.3 U
2,2'-oxybis[1-chloropropane]	1400	--	--	ug/l	0.93 U	0.93 U	0.93 U	0.97 U	0.93 U	0.93 U	0.97 U	0.95 U	0.97 U	0.99 U
2,3,4,6-Tetrachlorophenol	--	--	24	ug/l	0.69 U	0.69 U	0.69 U	0.72 U	0.69 U	0.69 U	0.72 U	0.7 U	0.72 U	0.73 U
2,4,5-Trichlorophenol	1800	--	120	ug/l	0.49 U	0.49 U	0.49 U	0.51 U	0.49 U	0.49 U	0.51 U	0.5 U	0.51 U	0.52 U
2,4,6-Trichlorophenol	30	--	1.2	ug/l	0.53 U	0.53 U	0.53 U	0.55 U	0.53 U	0.53 U	0.55 U	0.54 U	0.55 U	0.56 U
2,4-Dichlorophenol	77	--	4.6	ug/l	0.63 U	0.63 U	0.63 U	0.66 U	0.63 U	0.63 U	0.66 U	0.64 U	0.66 U	0.67 U
2,4-Dimethylphenol	380	--	36	ug/l	0.91 U	0.91 U	0.91 U	0.95 U	0.91 U	0.91 U	0.95 U	0.93 U	0.95 U	0.97 U
2,4-Dinitrophenol	69	--	3.9	ug/l	2.4 U	2.4 U	2.4 U	2.5 UJ	2.4 UJ	2.4 U	2.5 UJ	2.4 UJ	2.5 UJ	2.5 UJ
2,4-Dinitrotoluene	1.1	--	0.24	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
2,6-Dinitrotoluene	0.5	--	0.049	ug/l	0.88 U	0.88 U	0.88 U	0.92 U	0.88 U	0.88 U	0.92 U	0.9 U	0.92 U	0.94 U
2-Chloronaphthalene	1000	--	--	ug/l	0.61 U	0.61 U	0.61 U	0.64 U	0.61 U	0.61 U	0.64 U	0.62 U	0.64 U	0.65 U
2-Chlorophenol	81	--	9.1	ug/l	0.74 U	0.74 U	0.74 U	0.77 U	0.74 U	0.74 U	0.77 U	0.76 U	0.77 U	0.79 U
2-Methylnaphthalene	--	--	3.6	ug/l	0.88 U	0.88 U	0.88 U	0.92 U	0.88 U	0.88 U	0.92 U	0.9 U	0.92 U	0.94 U
2-Methylphenol	--	--	--	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.4 U
2-Nitroaniline	--	--	19	ug/l	0.65 U	0.65 U	0.65 UJ	0.68 UJ	0.65 UJ	0.65 UJ	0.68 UJ	0.66 UJ	0.68 UJ	0.69 U
2-Nitrophenol	--	--	--	ug/l	0.59 U	0.59 U	0.59 U	0.62 U	0.59 U	0.59 U	0.61 U	0.6 U	0.61 U	0.63 U
3 & 4 Methylphenol	--	--	--	ug/l	0.88 UJ	0.88 UJ	0.88 UJ	0.92 UJ	0.88 UJ	0.88 UJ	0.92 UJ	0.9 UJ	0.92 UJ	0.94 U
3,3'-Dichlorobenzidine	0.21	--	0.13	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
3-Nitroaniline	--	--	--	ug/l	0.82 U	0.82 U	0.82 U	0.86 U	0.82 U	0.82 U	0.85 U	0.84 U	0.85 U	0.87 U
4,6-Dinitro-2-methylphenol	13	--	--	ug/l	2 U	2 U	2 U	2.1 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.1 U
4-Bromophenyl phenyl ether	--	--	--	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1 U	1.1 U	1.1 U
4-Chloro-3-methylphenol	3000	--	--	ug/l	0.76 U	0.76 U	0.76 U	0.79 U	0.76 U	0.76 U	0.79 U	0.78 U	0.79 U	0.81 U
4-Chloroaniline	--	--	0.37	ug/l	0.73 U	0.73 U	0.73 U	0.76 U	0.73 U	0.73 U	0.76 U	0.74 U	0.76 U	0.78 U
4-Chlorophenyl phenyl ether	--	--	--	ug/l	0.96 U	0.96 U	0.96 U	1 U	0.96 U	0.96 U	1 U	0.98 U	1 U	1 U
4-Nitroaniline	--	--	3.8	ug/l	0.48 U	0.48 U	0.48 U	0.5 U	0.48 U	0.48 U	0.5 U	0.49 U	0.5 U	0.51 U
4-Nitrophenol	60	--	--	ug/l	4.7 UJ	4.7 UJ	4.7 U	4.9 U	4.7 U	4.7 U	4.8 U	4.7 U	4.8 U	4.9 U
Acenaphthene	670	--	53	ug/l	0.88 U	0.88 U	0.88 U	0.92 U	0.88 U	0.88 U	0.92 U	0.9 U	0.92 U	0.94 U
Acenaphthylene	--	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.68 U	0.65 U	0.65 U	0.68 U	0.66 U	0.68 U	0.69 U
Acetophenone	--	--	190	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
Anthracene	2100	--	180	ug/l	0.57 U	0.57 U	0.57 U	0.6 U	0.57 U	0.57 U	0.59 U	0.58 U	0.59 U	0.61 U
Atrazine	3	3	0.3	ug/l	0.77 U	0.77 U	0.77 U	0.81 U	0.77 U	0.77 U	0.8 U	0.79 U	0.8 U	0.82 U
Benzaldehyde	--	--	190	ug/l	0.86 U	0.86 U	0.86 U	0.9 U	0.86 U	0.86 U	0.9 U	0.88 U	0.9 U	0.91 U
Benzo[a]anthracene	0.5	--	--	ug/l	0.55 U	0.55 U	0.55 U	0.58 U	0.55 U	0.55 U	0.57 U	0.56 U	0.57 U	0.59 U
Benzo[a]pyrene	0.05	0.2	0.0034	ug/l	0.16 U	0.16 U	0.16 U	0.17 U	0.16 U	0.16 U	0.17 U	0.16 U	0.17 U	0.17 U
Benzo[b]fluoranthene	0.5	--	0.034	ug/l	0.44 U	0.44 U	0.44 U	0.46 U	0.44 U	0.44 U	0.46 U	0.45 U	0.46 U	0.47 U
Benzo[g,h,i]perylene	--	--	--	ug/l	0.75 U	0.75 U	0.75 U	0.78 U	0.75 U	0.75 U	0.78 U	0.77 U	0.78 U	0.8 U
Benzo[k]fluoranthene	5	--	0.34	ug/l	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U
Bis(2-chloroethoxy)methane	--	--	5.9	ug/l	0.69 U	0.69 U	0.69 U	0.72 U	0.69 U	0.69 U	0.72 U	0.7 U	0.72 U	0.73 U
Bis(2-chloroethyl)ether	0.3	--	0.014	ug/l	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U	0.13 U	0.12 U	0.13 U	0.13 U
Bis(2-ethylhexyl) phthalate	6	6	5.6	ug/l	0.72 U	0.72 U	0.72 U	0.75 U	0.72 U	0.72 U	1.1 J	0.73 U	0.75 U	0.77 U
Butyl benzyl phthalate	1500	--	16	ug/l	0.6 U	0.6 U	0.6 U	0.63 U	0.6 U	0.6 U	0.63 U	0.61 U	0.63 U	0.64 U
Caprolactam	--	--	990	ug/l	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbazole	--	--	--	ug/l	0.85 U	0.85 U	0.85 U	0.89 U	0.85 U	0.85 U	0.89 U	0.87 U	0.89 U	0.9 U
Chrysene	50	--	3.4	ug/l	0.67 U	0.67 U	0.67 U	0.7 U	0.67 U	0.67 U	0.7 U	0.68 U	0.7 U	0.71 U
Dibenz(a,h)anthracene	0.05	--	0.0034	ug/l	0.09 U	0.09 U	0.09 U	0.094 U	0.09 U	0.09 U	0.094 U	0.092 U	0.094 U	0.096 U
Dibenzofuran	--	--	0.79	ug/l	0.85 U	0.85 U	0.85 U	0.89 U	0.85 U	0.85 U	0.89 U	0.87 U	0.89 U	0.9 U

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Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFMW-031	CFMW-032	CFMW-033	CFMW-034	CFMW-035	CFMW-037	CFMW-038	CFMW-040	CFMW-042	CFMW-043
					Sample Date:	9/15/2016	9/15/2016	15 Sep 2016	9/14/2016	9/14/2016	9/16/2016	9/14/2016	9/14/2016	9/14/2016	9/13/2016
					Sample Designation:	CFMW-031-GW	CFMW-032-GW	CFMW-033-GW	CFMW-034-GW	CFMW-035-GW	CFMW-037-GW	CFMW-038-GW	CFMW-040-GW	CFMW-042-GW	CFMW-043-GW
					Sample Type:	N	N	N	N	N	N	N	N	N	N
Diethyl phthalate	17000	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U
Dimethyl phthalate	270000	--	--	ug/l	0.98 U	0.98 U	0.98 U	1 U	0.98 U	0.98 U	1 U	1 U	1 U	1 U
Di-n-butyl phthalate	2000	--	--	ug/l	0.82 U	0.82 U	0.82 U	0.86 U	0.82 U	0.82 U	0.85 U	0.84 U	0.85 U	0.87 U
Di-n-octyl phthalate	--	--	20	ug/l	0.69 U	0.69 U	0.69 U	0.72 U	0.69 U	0.69 U	0.72 U	0.7 U	0.72 U	0.73 U
Fluoranthene	130	--	80	ug/l	0.72 U	0.72 U	0.72 U	0.75 U	0.72 U	0.72 U	0.75 U	0.73 U	0.75 U	0.77 U
Fluorene	1100	--	29	ug/l	0.8 U	0.8 U	0.8 U	0.84 U	0.8 U	0.8 U	0.83 U	0.82 U	0.83 U	0.85 U
Hexachlorobenzene	0.2	1	0.0098	ug/l	0.47 U	0.47 U	0.47 U	0.49 U	0.47 U	0.47 U	0.49 U	0.48 U	0.49 U	0.5 U
Hexachlorobutadiene	5	--	0.14	ug/l	0.76 U	0.76 U	0.76 U	0.79 U	0.76 U	0.76 U	0.79 U	0.78 U	0.79 U	0.81 U
Hexachlorocyclopentadiene	50	50	0.041	ug/l	0.61 U	0.61 U	0.61 U	0.64 U	0.61 U	0.61 U	0.64 U	0.62 U	0.64 U	0.65 U
Hexachloroethane	30	--	0.33	ug/l	0.09 U	0.09 U	0.09 U	0.094 U	0.09 U	0.09 U	0.094 U	0.092 U	0.094 U	0.096 U
Indeno[1,2,3-cd]pyrene	0.5	--	0.034	ug/l	0.21 U	0.21 U	0.21 U	0.22 U	0.21 U	0.21 U	0.22 U	0.21 U	0.22 U	0.22 U
Isophorone	400	--	78	ug/l	0.67 U	0.67 U	0.67 U	0.7 U	0.67 U	0.67 U	0.7 U	0.68 U	0.7 U	0.71 U
Naphthalene	100	--	0.17	ug/l	0.8 U	0.8 U	0.8 U	0.84 U	0.8 U	0.8 U	0.83 U	0.82 U	0.83 U	0.85 U
Nitrobenzene	17	--	0.14	ug/l	0.49 U	0.49 U	0.49 U	0.51 U	0.49 U	0.49 U	0.51 U	0.5 U	0.51 U	0.52 U
N-Nitrosodi-n-propylamine	0.5	--	0.011	ug/l	0.83 U	0.83 U	0.83 UJ	0.87 UJ	0.83 UJ	0.83 UJ	0.86 UJ	0.85 UJ	0.86 UJ	0.88 U
N-Nitrosodiphenylamine	33	--	12	ug/l	0.74 U	0.74 U	0.74 U	0.77 U	0.74 U	0.74 U	0.77 U	0.76 U	0.77 U	0.79 U
Pentachlorophenol	1	1	0.041	ug/l	2.2 U	2.2 U	2.2 U	2.3 R	2.2 R	2.2 U	2.3 R	2.2 R	2.3 R	2.3 R
Phenanthrene	--	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.68 U	0.65 U	0.65 U	0.68 U	0.66 U	0.68 U	0.69 U
Phenol	300	--	580	ug/l	0.41 U	0.41 U	0.41 U	0.43 U	0.41 U	0.41 U	0.43 U	0.42 U	0.43 U	0.44 U
Pyrene	830	--	12	ug/l	0.83 U	0.83 U	0.83 U	0.87 U	0.83 U	0.83 U	0.86 U	0.85 U	0.86 U	0.88 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MC
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-044	CFMW-044b	CFMW-045	CFMW-047	CFMW-049	CFMW-050	CFMW-053	CFMW-054	CFMW-061	CFMW-064
			Sample Date:		9/15/2016	9/19/2016	9/15/2016	9/14/2016	9/21/2016	9/19/2016	9/14/2016	9/14/2016	9/15/2016	9/15/2016
			Sample Designation:		CFMW-044-GW	CFMW-044b-GW	CFMW-045-GW	CFMW-047-GW	CFMW-049-GW	CFMW-050-GW	CFMW-053-GW	CFMW-054-GW	CFMW-061-GW	CFMW-064-GW
			Sample Type:		N	N	N	N	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit										
1,1'-Biphenyl	--	--	0.083	ug/l	0.63 U	0.63 U	0.63 U	0.64 U	0.63 U	0.63 U	0.66 U	0.66 U	0.63 U	0.63 U
1,2,4,5-Tetrachlorobenzene	0.97	--	0.17	ug/l	0.43 U	0.43 U	0.43 U	0.44 U	0.43 U	0.43 U	0.45 U	0.45 U	0.43 U	0.43 U
1,4-Dioxane	--	--	0.46	ug/l	3.1 U	3.1 U	3.1 U	3.2 U	3.1 UJ	3.1 U	3.3 U	3.2 U	3.1 U	3.1 U
2,2'-oxybis[1-chloropropane]	1400	--	--	ug/l	0.93 U	0.93 U	0.93 U	0.95 U	0.93 U	0.93 U	0.97 U	0.97 U	0.93 U	0.93 U
2,3,4,6-Tetrachlorophenol	--	--	24	ug/l	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U	0.69 U	0.72 U	0.72 U	0.69 U	0.69 U
2,4,5-Trichlorophenol	1800	--	120	ug/l	0.49 U	0.49 U	0.49 U	0.5 U	0.49 U	0.49 U	0.51 U	0.51 U	0.49 U	0.49 U
2,4,6-Trichlorophenol	30	--	1.2	ug/l	0.53 U	0.53 U	0.53 U	0.54 U	0.53 U	0.53 U	0.55 U	0.55 U	0.53 U	0.53 U
2,4-Dichlorophenol	77	--	4.6	ug/l	0.63 U	0.63 U	0.63 U	0.64 U	0.63 U	0.63 U	0.66 U	0.66 U	0.63 U	0.63 U
2,4-Dimethylphenol	380	--	36	ug/l	0.91 U	0.91 U	0.91 U	0.93 U	0.91 U	0.91 U	0.95 U	0.95 U	0.91 U	0.91 U
2,4-Dinitrophenol	69	--	3.9	ug/l	2.4 U	2.4 U	2.4 U	2.4 UJ	2.4 U	2.4 U	2.5 UJ	2.5 UJ	2.4 U	2.4 U
2,4-Dinitrotoluene	1.1	--	0.24	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1.1 U	1 U	1 U
2,6-Dinitrotoluene	0.5	--	0.049	ug/l	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.88 U	0.92 U	0.92 U	0.88 U	0.88 U
2-Chloronaphthalene	1000	--	--	ug/l	0.61 U	0.61 U	0.61 U	0.62 U	0.61 U	0.61 U	0.64 U	0.64 U	0.61 U	0.61 U
2-Chlorophenol	81	--	9.1	ug/l	0.74 U	0.74 U	0.74 U	0.76 U	0.74 U	0.74 U	0.77 U	0.77 U	0.74 U	0.74 U
2-Methylnaphthalene	--	--	3.6	ug/l	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.88 U	0.92 U	0.92 U	0.88 U	0.88 U
2-Methylphenol	--	--	--	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2-Nitroaniline	--	--	19	ug/l	0.65 U	0.65 U	0.65 UJ	0.66 UJ	0.65 U	0.65 U	0.68 UJ	0.68 UJ	0.65 UJ	0.65 UJ
2-Nitrophenol	--	--	--	ug/l	0.59 U	0.59 U	0.59 U	0.6 U	0.59 U	0.59 U	0.62 U	0.61 U	0.59 U	0.59 U
3 & 4 Methylphenol	--	--	--	ug/l	0.88 UJ	0.88 U	0.88 UJ	0.9 UJ	0.88 U	0.88 U	0.92 UJ	0.92 UJ	0.88 UJ	0.88 UJ
3,3'-Dichlorobenzidine	0.21	--	0.13	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1.1 U	1 U	1 U
3-Nitroaniline	--	--	--	ug/l	0.82 U	0.82 U	0.82 U	0.84 U	0.82 U	0.82 U	0.86 U	0.85 U	0.82 U	0.82 U
4,6-Dinitro-2-methylphenol	13	--	--	ug/l	2 U	2 U	2 U	2.1 U	2 U	2 U	2.1 U	2.1 U	2 U	2 U
4-Bromophenyl phenyl ether	--	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1.1 U	1 U	1 U
4-Chloro-3-methylphenol	3000	--	--	ug/l	0.76 U	0.76 U	0.76 U	0.78 U	0.76 U	0.76 U	0.79 U	0.79 U	0.76 U	0.76 U
4-Chloroaniline	--	--	0.37	ug/l	0.73 U	0.73 U	0.73 U	0.74 U	0.73 U	0.73 U	0.76 U	0.76 U	0.73 U	0.73 U
4-Chlorophenyl phenyl ether	--	--	--	ug/l	0.96 U	0.96 U	0.96 U	0.98 U	0.96 U	0.96 U	1 U	1 U	0.96 U	0.96 U
4-Nitroaniline	--	--	3.8	ug/l	0.48 U	0.48 U	0.48 U	0.49 U	0.48 U	0.48 U	0.5 U	0.5 U	0.48 U	0.48 U
4-Nitrophenol	60	--	--	ug/l	4.7 UJ	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.9 U	4.8 U	4.7 U	4.7 U
Acenaphthene	670	--	53	ug/l	0.88 U	0.88 U	0.88 U	0.9 U	0.88 U	0.88 U	0.92 U	0.92 U	0.88 U	0.88 U
Acenaphthylene	--	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.66 U	0.65 U	0.65 U	0.68 U	0.68 U	0.65 U	0.65 U
Acetophenone	--	--	190	ug/l	1 U	1 U	1 U	1.1 U	1 U	1 U	1.1 U	1.1 U	1 U	1 U
Anthracene	2100	--	180	ug/l	0.57 U	0.57 U	0.57 U	0.58 U	0.57 U	0.57 U	0.6 U	0.59 U	0.57 U	0.57 U
Atrazine	3	3	0.3	ug/l	0.77 U	0.77 U	0.77 U	0.79 U	0.77 U	0.77 U	0.81 U	0.8 U	0.77 U	0.77 U
Benzaldehyde	--	--	190	ug/l	0.86 U	0.86 U	0.86 U	0.88 U	0.86 U	0.86 U	0.9 U	0.9 U	0.86 U	0.86 U
Benzo[a]anthracene	0.5	--	--	ug/l	0.55 U	0.55 U	0.55 U	0.56 U	0.55 U	0.55 U	0.58 U	0.57 U	0.55 U	0.55 U
Benzo[a]pyrene	0.05	0.2	0.0034	ug/l	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.17 U	0.17 U	0.16 U	0.16 U
Benzo[b]fluoranthene	0.5	--	0.034	ug/l	0.44 U	0.44 U	0.44 U	0.45 U	0.44 U	0.44 U	0.46 U	0.46 U	0.44 U	0.44 U
Benzo[g,h,i]perylene	--	--	--	ug/l	0.75 U	0.75 U	0.75 U	0.77 U	0.75 U	0.75 U	0.78 U	0.78 U	0.75 U	0.75 U
Benzo[k]fluoranthene	5	--	0.34	ug/l	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.19 U	0.19 U	0.18 U	0.18 U
Bis(2-chloroethoxy)methane	--	--	5.9	ug/l	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U	0.69 U	0.72 U	0.72 U	0.69 U	0.69 U
Bis(2-chloroethyl)ether	0.3	--	0.014	ug/l	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U
Bis(2-ethylhexyl) phthalate	6	6	5.6	ug/l	0.72 U	0.72 U	0.72 U	0.73 U	0.72 U	0.72 U	0.75 U	0.75 U	0.72 U	0.72 U
Butyl benzyl phthalate	1500	--	16	ug/l	0.6 U	0.6 U	0.6 U	0.61 U	0.6 U	0.6 U	0.63 U	0.63 U	0.6 U	0.6 U
Caprolactam	--	--	990	ug/l	1.1 U	1.1 U	1.1 U	1.1 U	1.1 UJ	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbazole	--	--	--	ug/l	0.85 U	0.85 U	0.85 U	0.87 U	0.85 U	0.85 U	0.89 U	0.89 U	0.85 U	0.85 U
Chrysene	50	--	3.4	ug/l	0.67 U	0.67 U	0.67 U	0.68 U	0.67 U	0.67 U	0.7 U	0.7 U	0.67 U	0.67 U
Dibenz(a,h)anthracene	0.05	--	0.0034	ug/l	0.09 U	0.09 U	0.09 U	0.092 U	0.09 U	0.09 U	0.094 U	0.094 U	0.09 U	0.09 U
Dibenzofuran	--	--	0.79	ug/l	0.85 U	0.85 U	0.85 U	0.87 U	0.85 U	0.85 U	0.89 U	0.89 U	0.85 U	0.85 U

Preliminary - Under EPA and MDEQ Review

Table T2. Semivolatile Organic Compounds in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFMW-044	CFMW-044b	CFMW-045	CFMW-047	CFMW-049	CFMW-050	CFMW-053	CFMW-054	CFMW-061	CFMW-064
					Sample Date:	9/15/2016	9/19/2016	9/15/2016	9/14/2016	9/21/2016	9/19/2016	9/14/2016	9/14/2016	9/15/2016	9/15/2016
					Sample Designation:	CFMW-044-GW	CFMW-044b-GW	CFMW-045-GW	CFMW-047-GW	CFMW-049-GW	CFMW-050-GW	CFMW-053-GW	CFMW-054-GW	CFMW-061-GW	CFMW-064-GW
					Sample Type:	N	N	N	N	N	N	N	N	N	N
Diethyl phthalate	17000	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dimethyl phthalate	270000	--	--	ug/l	0.98 U	0.98 U	0.98 U	1 U	0.98 U	0.98 U	1 U	1 U	0.98 U	0.98 U
Di-n-butyl phthalate	2000	--	--	ug/l	0.82 U	0.82 U	0.82 U	0.84 U	0.82 U	0.82 U	0.86 U	0.85 U	0.82 U	0.82 U
Di-n-octyl phthalate	--	--	20	ug/l	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U	0.69 U	0.72 U	0.72 U	0.69 U	0.69 U
Fluoranthene	130	--	80	ug/l	0.72 U	0.72 U	0.72 U	0.73 U	0.72 U	0.72 U	0.75 U	0.75 U	0.72 U	0.72 U
Fluorene	1100	--	29	ug/l	0.8 U	0.8 U	0.8 U	0.82 U	0.8 U	0.8 U	0.84 U	0.83 U	0.8 U	0.8 U
Hexachlorobenzene	0.2	1	0.0098	ug/l	0.47 U	0.47 U	0.47 U	0.48 U	0.47 U	0.47 U	0.49 U	0.49 U	0.47 U	0.47 U
Hexachlorobutadiene	5	--	0.14	ug/l	0.76 U	0.76 U	0.76 U	0.78 U	0.76 U	0.76 U	0.79 U	0.79 U	0.76 U	0.76 U
Hexachlorocyclopentadiene	50	50	0.041	ug/l	0.61 U	0.61 U	0.61 U	0.62 U	0.61 U	0.61 U	0.64 U	0.64 U	0.61 U	0.61 U
Hexachloroethane	30	--	0.33	ug/l	0.09 U	0.09 U	0.09 U	0.092 U	0.09 U	0.09 U	0.094 U	0.094 U	0.09 U	0.09 U
Indeno[1,2,3-cd]pyrene	0.5	--	0.034	ug/l	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.22 U	0.22 U	0.21 U	0.21 U
Isophorone	400	--	78	ug/l	0.67 U	0.67 U	0.67 U	0.68 U	0.67 U	0.67 U	0.7 U	0.7 U	0.67 U	0.67 U
Naphthalene	100	--	0.17	ug/l	0.8 U	0.8 U	0.8 U	0.82 U	0.8 U	0.8 U	0.84 U	0.83 U	0.8 U	0.8 U
Nitrobenzene	17	--	0.14	ug/l	0.49 U	0.49 U	0.49 U	0.5 U	0.49 U	0.49 U	0.51 U	0.51 U	0.49 U	0.49 U
N-Nitrosodi-n-propylamine	0.5	--	0.011	ug/l	0.83 U	0.83 U	0.83 UJ	0.85 UJ	0.83 U	0.83 U	0.87 UJ	0.86 UJ	0.83 UJ	0.83 UJ
N-Nitrosodiphenylamine	33	--	12	ug/l	0.74 U	0.74 U	0.74 U	0.76 U	0.74 U	0.74 U	0.77 U	0.77 U	0.74 U	0.74 U
Pentachlorophenol	1	1	0.041	ug/l	2.2 U	2.2 U	2.2 U	2.2 R	2.2 U	2.2 U	2.3 R	2.3 R	2.2 U	2.2 U
Phenanthrene	--	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.66 U	0.65 U	0.65 U	0.68 U	0.68 U	0.65 U	0.65 U
Phenol	300	--	580	ug/l	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.43 U	0.43 U	0.41 U	0.41 U
Pyrene	830	--	12	ug/l	0.83 U	0.83 U	0.83 U	0.85 U	0.83 U	0.83 U	0.87 U	0.86 U	0.83 U	0.83 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MC
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: / Sample Date: / Sample Designation: / Sample Type: CFMW-001 9/20/2016 CFMW-001-GW N	CFMW-002 9/12/2016 CFMW-002-GW N	CFMW-003 9/14/2016 CFMW-003-GW N	CFMW-003a 9/20/2016 CFMW-003a-GW N	CFMW-007 9/21/2016 CFMW-007-GW N	CFMW-008 9/21/2016 CFMW-008-GW N	CFMW-008a 9/15/2016 CFMW-008a-GW N	CFMW-010 9/12/2016 CFMW-010-GW N	CFMW-011 9/13/2016 CFMW-011-GW N	CFMW-011a 9/20/2016 CFMW-011a-GW N	CFMW-012 9/12/2016 CFMW-012-GW N
Aluminum	--	--	2000	ug/l	18.2 U	254	18.2 U	33.8 J	18.2 U	18.2 U	107	1850	18.2 U	27.2 J	25.7 J
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.62 J	0.62 U	0.62 U	0.68 J	0.62 U	0.62 U	0.62 U	0.62 U
Arsenic	**10**	10	0.052	ug/l	0.64 U	0.96 J	0.64 U	5.2	0.64 U	0.64 U	0.64 U	5.2	0.64 U	3.3	**15.5**
Barium	**1000**	2000	380	ug/l	228	243	28.6	53.3	163	140	701	239	186	42.7	79.6
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Calcium	--	--	--	ug/l	60300	31800	178000	31000	50200	6370	388000	35500	47600	24600	8660
Chromium	100	100	--	ug/l	1.3 U	1.9 J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.6 J	1.3 U	1.3 U	1.3 U
Cobalt	--	--	0.6	ug/l	1.3 U	6.1	1.3 J	1.3 U	1.3 U	1.3 U	1.3 U	23.7	1.3 U	1.3 U	7.9
Copper	1300	1300	80	ug/l	3.2 J	4.2	4.8	1.4 U	1.4 U	1.4 J	3.7 J	16.8	3.2 J	1.4 U	12.6
Cyanide, Total	**200**	200	0.15	ug/l	2.4 J	**2060 J**	15.4	2.1 J	2.1 J	2 U	2.2 J	**7320 J**	80.7	2 U	**2280 J**
Iron	--	--	1400	ug/l	42.4 U	871	42.4 U	42.4 U	42.4 U	42.4 U	42.4 U	4710	42.4 U	42.4 U	717
Lead	15	15	15	ug/l	0.38 U	0.53 J	0.38 U	0.38 U	0.38 U	0.38 U	0.82 J	2.8	0.38 U	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	14100	10900	45800	5380	12800	4320	63.6 U	16500	14100	9010	4130
Manganese	--	--	43	ug/l	2.5 U	26.8	306	56.2	11.4	11.1	2.5 U	110	2.5 U	13.7	2.5 U
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U	3 J	1.4 U	1.4 U	1.4 U	1.4 U	5	1.4 U	1.4 U	1.5 J
Potassium	--	--	--	ug/l	740	1020	2100	3270	579	1190	18000	1460	657	2070	817
Selenium	50	50	10	ug/l	0.73 U	0.84 J	7.5 J	0.73 U	0.73 U	0.73 U	0.73 U	3.3 J	0.73 U	0.73 U	4.4 J
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Sodium	--	--	--	ug/l	8360	173000	322000	17500	3050	138000	49600	445000	9950	19900	226000
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U	1.9 U	3.7 J	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	2.8 J	19.8
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7 U	7 U	11.5 J	12.3 J	7.5 J	7 U	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-012a Sample Date: 9/15/2016 Sample Designation: CFMW-012a-GW Sample Type: N	CFMW-012a 9/15/2016 CFMW-DUP2-GW FD	CFMW-014 9/12/2016 CFMW-014-GW N	CFMW-015 9/12/2016 CFMW-015-GW N	CFMW-016a 9/21/2016 CFMW-016a-GW N	CFMW-019 9/12/2016 CFMW-019-GW N	CFMW-019a 9/20/2016 CFMW-019a-GW N	CFMW-020 9/20/2016 CFMW-020-GW N	CFMW-021 9/12/2016 CFMW-021-GW N	CFMW-022 9/13/2016 CFMW-022-GW N
Aluminum	--	--	2000	ug/l	18.2 U	18.2 U	18.2 U	18.2 U	64.8	18.2 U	82.3	18.2 U	18.2 U	9.1 U
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.69 J	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.31 U
Arsenic	**10**	10	0.052	ug/l	0.64 U	0.64 U	0.64 U	**47.7**	1.3 J	0.64 U	8.3	2.1	0.64 U	0.32 U
Barium	**1000**	2000	380	ug/l	78.2	77.7	336	62	99.5	104	56.9	74.2	193	102
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.12 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U
Calcium	--	--	--	ug/l	51300	50800	44900	2710	38100	55100	15100	54400	62300	27700
Chromium	100	100	--	ug/l	1.3 U	1.3 U	1.3 U	2 J	1.8 J	1.3 U	1.3 U	1.3 U	1.3 U	0.66 U
Cobalt	--	--	0.6	ug/l	1.3 U	1.3 U	5.3	27.8	1.3 U	3.3 J	1.3 U	1.3 U	1.5 J	0.65 U
Copper	1300	1300	80	ug/l	1.4 UJ	3.3 J	5.7	46.8	3.6 J	1.4 U	1.4 U	2.4 J	4.2	1.6 J
Cyanide, Total	**200**	200	0.15	ug/l	2 U	2 U	**2750 J**	**6240 J**	2.8 J	**961 J**	2 U	2.9 J	**400 J**	155
Iron	--	--	1400	ug/l	42.4 U	42.4 U	927	2550	42.4 U	1160	42.4 U	42.4 U	85.9 J	36.1 J
Lead	15	15	15	ug/l	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.19 U
Magnesium	--	--	--	ug/l	13000	13000	16800	4010	4060	17200	3700	13900	18800	6720
Manganese	--	--	43	ug/l	21.6	21.3	2.5 U	4.1 J	2.5 U	35.8	9.4	37.5	2.5 U	1.2 U
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U	1.4 U	7.7	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	0.68 U
Potassium	--	--	--	ug/l	721	726	1120	2400	2780	1520	8880	774	1000	318
Selenium	50	50	10	ug/l	0.73 U	0.73 U	1.7 J	13.5	0.73 U	0.84 J	0.73 U	0.73 U	0.73 U	0.37 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	0.64 U
Sodium	--	--	--	ug/l	6380	6190	168000	620000	18600	104000	50900	4810	54300	5090
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.13 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U	1.9 U	50.4	1.9 J	1.9 U	1.9 U	1.9 U	1.9 U	0.95 U
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7 U	7 U	27.8	7 U	7 U	7 U	3.5 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-023	CFMW-025a	CFMW-025b	CFMW-026	CFMW-027	CFMW-028	CFMW-028a	CFMW-029	CFMW-029	CFMW-031
					Sample Date: 9/21/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016	9/20/2016	9/13/2016	9/13/2016	9/15/2016
					Sample Designation: CFMW-023-GW	CFMW-025a-GW	CFMW-025b-GW	CFMW-026-GW	CFMW-027-GW	CFMW-028-GW	CFMW-028a-GW	CFMW-029-GW	CFMW-DUP1-GW	CFMW-031-GW
					Sample Type: N	N	N	N	N	N	N	N	FD	N
Aluminum	--	--	2000	ug/l	18.2 U	18.2 U	18.2 U	18.2 U	9.1 U	18.2 U	34.6 J	18.2 U	18.2 U	18.2 U
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.62 U	0.31 U	0.62 U	1 J	0.62 U	0.62 U	0.62 U
Arsenic	**10**	10	0.052	ug/l	0.64 J	0.93 J	0.64 U	0.64 U	0.32 U	0.64 U	1.7 J	0.64 U	0.64 U	0.64 U
Barium	**1000**	2000	380	ug/l	235	128	320	260	89.1	141	48	233	225	164
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.12 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Calcium	--	--	--	ug/l	60700	38300	50700	59900	24500	44100	12200	52700	51100	47700
Chromium	100	100	--	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	0.66 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Cobalt	--	--	0.6	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	0.85 J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Copper	1300	1300	80	ug/l	4.3	2.4 J	1.4 U	1.4 U	1.9 J	4.2	2.2 J	4.5 J	1.4 UJ	1.4 U
Cyanide, Total	**200**	200	0.15	ug/l	2.7 J	2 U	2 U	3.9 J	**603**	104	2 J	**366**	**357**	**233**
Iron	--	--	1400	ug/l	42.4 U	174	101 J	42.4 U	147	46.6 J	42.4 U	172	164	99.8 J
Lead	15	15	15	ug/l	0.38 U	0.38 U	0.38 U	0.38 U	0.19 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	17700	24100	20000	14600	7890	15900	8100	18700	17800	13200
Manganese	--	--	43	ug/l	2.5 U	297	111	65	1.2 J	366	2.5 U	2.5 U	2.5 U	2.5 U
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U	1.4 U	1.4 U	0.68 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Potassium	--	--	--	ug/l	600	2090	932	858	520	4230	3260	898	864	736
Selenium	50	50	10	ug/l	0.73 U	0.73 U	0.73 U	0.73 U	0.37 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	0.64 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Sodium	--	--	--	ug/l	4100	8850	6430	11600	31000	26000	13600	35400	34200	29800
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.13 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U	1.9 U	1.9 U	0.95 U	1.9 U	7.2	1.9 U	1.9 U	1.9 U
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7 U	3.5 U	7 U	7 U	7 U	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-032 Sample Date: 9/15/2016 Sample Designation: CFMW-032-GW Sample Type: N	CFMW-032a 16 Sep 2016 CFMW-032a-GW N	CFMW-033 9/15/2016 CFMW-033-GW N	CFMW-034 9/14/2016 CFMW-034-GW N	CFMW-035 9/14/2016 CFMW-035-GW N	CFMW-037 9/16/2016 CFMW-037-GW N	CFMW-038 9/14/2016 CFMW-038-GW N	CFMW-040 9/14/2016 CFMW-040-GW N	CFMW-042 9/14/2016 CFMW-042-GW N	CFMW-043 9/13/2016 CFMW-043-GW N
Aluminum	--	--	2000	ug/l	18.2 U	69.3	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
Arsenic	**10**	10	0.052	ug/l	0.64 U	0.64 U	0.64 U	0.64 U	5.8	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Barium	**1000**	2000	380	ug/l	147	890	176	199	546	272	253	148	157	136
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Calcium	--	--	--	ug/l	38800	628000	53600	59100	76700	49100	60600	55700	56000	51600
Chromium	100	100	--	ug/l	1.3 U	3.1 J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Cobalt	--	--	0.6	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 J	1.3 J
Copper	1300	1300	80	ug/l	2.1 J	1.7 J	4.1	4.5	1.4 U	1.4 U	1.4 U	4	1.4 U	1.4 U
Cyanide, Total	**200**	200	0.15	ug/l	**412 J-**	2 U	**478**	**327**	57.1	66.7	**260**	**304**	**402**	**510**
Iron	--	--	1400	ug/l	198	42.4 U	210	148	502	42.4 U	115 J	140	184	207
Lead	15	15	15	ug/l	0.38 U	0.6 J	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	11700	63.6 U	16600	15500	32700	14200	16300	15600	16200	15900
Manganese	--	--	43	ug/l	536	2.5 U	2.5 U	9.4	1450	2.5 U	2.5 U	54.5	2.5 U	38.8
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 J	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Potassium	--	--	--	ug/l	2630	21600	944	918	2430	807	1030	1180	1010	999
Selenium	50	50	10	ug/l	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Sodium	--	--	--	ug/l	155000	25400	43500	27400	34500	8930	37300	34700	43900	44200
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-044 Sample Date: 9/15/2016 Sample Designation: CFMW-044-GW Sample Type: N	CFMW-044a 9/19/2016 CFMW-044a-GW N	CFMW-044b 9/19/2016 CFMW-044b-GW N	CFMW-045 9/15/2016 CFMW-045-GW N	CFMW-045a 9/19/2016 CFMW-045a-GW N	CFMW-047 9/14/2016 CFMW-047-GW N	CFMW-049 9/21/2016 CFMW-049-GW N	CFMW-049a 9/16/2016 CFMW-049a-GW N	CFMW-050 9/19/2016 CFMW-050-GW N	CFMW-053 9/14/2016 CFMW-053-GW N
Aluminum	--	--	2000	ug/l	18.2 U	108	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
Arsenic	**10**	10	0.052	ug/l	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Barium	**1000**	2000	380	ug/l	109	75	87.4	150	88.5	232	273	520	255	147
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Calcium	--	--	--	ug/l	50100	155000	13700	53700	45800	57100	47600	198000	46800	58200
Chromium	100	100	--	ug/l	1.3 U	4.2	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	4	1.3 U	1.3 U
Cobalt	--	--	0.6	ug/l	1.4 J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 J
Copper	1300	1300	80	ug/l	1.4 U	1.9 J	1.4 U	3.8 J	1.4 U	4.1	4	1.4 U	3.8 J	4.6
Cyanide, Total	**200**	200	0.15	ug/l	**430**	32.8	5.9 J	**365**	56	120	93.2	47.1	51.7	**363**
Iron	--	--	1400	ug/l	370	42.4 U	732	152	42.4 U	55.1 J	42.4 U	42.4 U	42.4 U	179
Lead	15	15	15	ug/l	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	16200	121 J	16500	15600	13000	15600	15500	291	15300	16600
Manganese	--	--	43	ug/l	45.4	2.5 U	86.2	8.8	23.6	2.5 U	2.5 U	2.5 U	3.1 J	2.5 U
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Potassium	--	--	--	ug/l	888	1660	2520	936	2300	1200	857	19700	845	1070
Selenium	50	50	10	ug/l	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Sodium	--	--	--	ug/l	45000	40700	3900	39000	31100	18500	10100	25200	11700	44000
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	1.9 U	10.3	1.9 U	1.9 U	2.3 J	1.9 U	1.9 U	1.9 J	1.9 U	1.9 U
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	Sample Location: CFMW-053a Sample Date: 9/19/2016 Sample Designation: CFMW-053a-GW Sample Type: N	CFMW-054 9/14/2016 CFMW-054-GW N	CFMW-056 9/20/2016 CFMW-056-GW N	CFMW-056 9/20/2016 CFMW-DUP3-GW FD	CFMW-056a 9/20/2016 CFMW-056a-GW N	CFMW-056b 9/13/2016 CFMW-056b-GW N	CFMW-057 9/19/2016 CFMW-057-GW N	CFMW-057a 9/19/2016 CFMW-057a-GW N	CFMW-059 9/15/2016 CFMW-059-GW N	CFMW-059a 9/19/2016 CFMW-059a-GW N
Aluminum	--	--	2000	ug/l	90.6	18.2 U	18.2 U	18.2 U	43	18.2 U	18.2 U	168	18.2 U	137
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.62 U	0.87 J	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
Arsenic	**10**	10	0.052	ug/l	0.64 U	0.64 U	0.64 U	0.64 U	2.2	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Barium	**1000**	2000	380	ug/l	**4430**	153	144	142	73.3	132	46.3	924	140	268
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Calcium	--	--	--	ug/l	922000	59400	48700	49700	18600	69000	20500	581000	69300	340000
Chromium	100	100	--	ug/l	11.4	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	16	1.3 U	1.3 J
Cobalt	--	--	0.6	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Copper	1300	1300	80	ug/l	2.4 J	1.4 U	1.4 U	1.4 U	3 J	3.7 J	1.4 U	7.1	1.4 U	3.7 J
Cyanide, Total	**200**	200	0.15	ug/l	2 U	**327**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Iron	--	--	1400	ug/l	42.4 U	156	516	514	42.4 U	42.4 U	2290	42.4 U	42.4 U	42.4 U
Lead	15	15	15	ug/l	0.62 J	0.38 U	0.38 U	0.38 U	0.42 J	0.38 U	0.38 U	1.3	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	63.6 U	16500	18700	19000	7470	17500	15600	63.6 U	14100	63.6 U
Manganese	--	--	43	ug/l	2.5 U	2.5 U	36.7	37.4	73.3	83.2	65.6	2.5 U	88.4	2.5 U
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Potassium	--	--	--	ug/l	65200	1050	1570	1590	10800	925	1730	18100	1150	7920
Selenium	50	50	10	ug/l	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Sodium	--	--	--	ug/l	102000	38800	4100	4280	26700	9450	3700	48100	20600	15400
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U	1.9 U	1.9 U	5.4	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7.1 J	7 U	7 U	7 U	7 U	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T3. Metals in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-061	CFMW-064
				Sample Date:	9/15/2016	9/15/2016
				Sample Designation:	CFMW-061-GW	CFMW-064-GW
				Sample Type:	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit		
Aluminum	--	--	2000	ug/l	18.2 U	18.2 U
Antimony	6	6	0.78	ug/l	0.62 U	0.62 U
Arsenic	**10**	10	0.052	ug/l	0.64 U	0.64 U
Barium	**1000**	2000	380	ug/l	220	312
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U
Calcium	--	--	--	ug/l	50100	47100
Chromium	100	100	--	ug/l	1.3 U	1.3 U
Cobalt	--	--	0.6	ug/l	1.3 U	1.3 U
Copper	1300	1300	80	ug/l	3.1 J	1.4 U
Cyanide, Total	**200**	200	0.15	ug/l	7.7 J	42.7
Iron	--	--	1400	ug/l	42.4 U	42.4 U
Lead	15	15	15	ug/l	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	16200	17900
Manganese	--	--	43	ug/l	68	19.3
Mercury	2	2	0.063	ug/l	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U
Potassium	--	--	--	ug/l	837	948
Selenium	50	50	10	ug/l	0.73 U	0.73 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U
Sodium	--	--	--	ug/l	8660	9020
Thallium	2	2	0.02	ug/l	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U
Zinc	2000	--	600	ug/l	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-001	CFMW-002	CFMW-003	CFMW-003a	CFMW-007	CFMW-008	CFMW-008a	CFMW-010	CFMW-011
				Sample Date:	9/20/2016	9/12/2016	9/14/2016	9/20/2016	9/21/2016	9/21/2016	9/15/2016	9/12/2016	9/13/2016
				Sample Designation:	CFMW-001-GW	CFMW-002-GW	CFMW-003-GW	CFMW-003a-GW	CFMW-007-GW	CFMW-008-GW	CFMW-008a-GW	CFMW-010-GW	CFMW-011-GW
				Sample Type:	N	N	N	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--	--	--	ug/l	72 U	93 J	154	72 U	72 U	322	199	1240	72 U
Chloride	--	--	--	ug/l	611	4130	39100 J-	8600	1860 J-	2020	8430 J-	4630	1590
Fluoride	**4000**	4000	80	ug/l	91.7	**18900**	15 U	312	77 J	777	180	**30900**	207
Hardness as calcium carbonate	--	--	--	ug/l	206000	140000	134000	164000	184000	28000	1000000	168000	190000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	100 U	**14300**	5730	100 U	100 U	100 U	104	**46200**	1260
Orthophosphate as P	--	--	--	ug/l	42 U	42 U	42 UJ	42 U	42 UJ	42 UJ	42 UJ	42 U	42 UJ
Sulfate	--	--	--	ug/l	6600	14400	694000 J-	36700	5530	7030	20200	48000	4630

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-011a	CFMW-012	CFMW-012a	CFMW-012a	CFMW-014	CFMW-015	CFMW-016a	CFMW-019	CFMW-019a
				Sample Date:	9/20/2016	12 Sep 2016	9/15/2016	9/15/2016	9/12/2016	9/12/2016	9/21/2016	9/12/2016	9/20/2016
				Sample Designation:	CFMW-011a-GW	CFMW-012-GW	CFMW-012a-GW	CFMW-DUP2-GW	CFMW-014-GW	CFMW-015-GW	CFMW-016a-GW	CFMW-019-GW	CFMW-019a-GW
				Sample Type:	N	N	N	FD	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--	--	--	ug/l	72 U	224	72 U	72 U	110	23600	674	72 U	97.7 J
Chloride	--	--	--	ug/l	4070	3490	571 J-	570 J-	2450	5770	2280	5930	3180
Fluoride	**4000**	4000	80	ug/l	200	**12400**	54.6 J	55.8 J	**8300**	**38400**	304	2860	361
Hardness as calcium carbonate	--	--	--	ug/l	118000	48000	194000	196000	200000	70000	116000	228000	132000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	100 U	**16500**	100 U	100 U	**18100**	**41100**	100 U	7230	100 U
Orthophosphate as P	--	--	--	ug/l	42 U	42 U	42 UJ	42 UJ	42 U	267	42 UJ	42 U	42 U
Sulfate	--	--	--	ug/l	12500	21500	5260	5740	35000	87400	5880	95000	14300

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-020	CFMW-021	CFMW-022	CFMW-023	CFMW-025a	CFMW-025b	CFMW-026	CFMW-027	CFMW-028
				Sample Date:	9/20/2016	9/12/2016	13 Sep 2016	9/21/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016	9/13/2016
				Sample Designation:	CFMW-020-GW	CFMW-021-GW	CFMW-022-GW	CFMW-023-GW	CFMW-025a-GW	CFMW-025b-GW	CFMW-026-GW	CFMW-027-GW	CFMW-028-GW
				Sample Type:	N	N	N	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--	--	--	ug/l	72 U	72 U	171	72 U	72 U	72 U	72 U	77.5 J	72 U
Chloride	--	--	--	ug/l	2250	3730	1590	669 J-	1890	1940	2720	2220	2090
Fluoride	**4000**	4000	80	ug/l	281	1950	432	395	399	585	1650	2390	3170 J+
Hardness as calcium carbonate	--	--	--	ug/l	208000	244000	196000	236000	200000	220000	220000	198000	178000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	256	2590	702	264	100 U	145	367	3970	542
Orthophosphate as P	--	--	--	ug/l	42 U	42 U	42 UJ	42 UJ	42 UJ	42 UJ	42 UJ	42 UJ	42 UJ
Sulfate	--	--	--	ug/l	20100	57100	5470	5400	13500	13800	20300	27300	8380

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-028a	CFMW-029	CFMW-029	CFMW-031	CFMW-032	CFMW-032a	CFMW-033	CFMW-034	CFMW-035
				Sample Date:	9/20/2016	9/13/2016	9/13/2016	9/15/2016	9/15/2016	9/16/2016	9/15/2016	9/14/2016	9/14/2016
				Sample Designation:	CFMW-028a-GW	CFMW-029-GW	CFMW-DUP1-GW	CFMW-031-GW	CFMW-032-GW	CFMW-032a-GW	CFMW-033-GW	CFMW-034-GW	CFMW-035-GW
				Sample Type:	N	N	FD	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--	--	--	ug/l	72 U	113 J	72.1 J	72 U	72 U	95.7 J	72 U	142	72 U
Chloride	--	--	--	ug/l	16900	1000	999	1700 J-	2260	1650 J-	2390 J-	1810 J-	6880 J-
Fluoride	**4000**	4000	80	ug/l	1020	3370 J+	3370 J+	2440	**5210 J-**	49 J-	2340	**4530 J-**	415
Hardness as calcium carbonate	--	--	--	ug/l	66000	214000	214000	184000	152000	1600000	208000	220000	336000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	100 U	1850	1830	1280	2810	100 U	2920	1520	100 U
Orthophosphate as P	--	--	--	ug/l	84 U	42 UJ	42 UJ	42 UJ	42 UJ	42 R	42 UJ	42 UJ	42 UJ
Sulfate	--	--	--	ug/l	34200	18300	18300	8390	10900	2820 J-	22600 J-	13800 J+	29500 J-

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFMW-037	CFMW-038	CFMW-040	CFMW-042	CFMW-043	CFMW-044	CFMW-044a	CFMW-044b	CFMW-045
			Sample Date:		9/16/2016	9/14/2016	9/14/2016	9/14/2016	9/13/2016	9/15/2016	9/19/2016	9/19/2016	9/15/2016
			Sample Designation:		CFMW-037-GW	CFMW-038-GW	CFMW-040-GW	CFMW-042-GW	CFMW-043-GW	CFMW-044-GW	CFMW-044a-GW	CFMW-044b-GW	CFMW-045-GW
			Sample Type:		N	N	N	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--	--	--	ug/l	72 U	72 U	72 U	72 U	72 U	110	72 U	6400	72 U
Chloride	--	--	--	ug/l	2760	2810 J	3240 J	2940 J-	2470	2960 J-	5340	3500	2840 J-
Fluoride	**4000**	4000	80	ug/l	1030 J-	2590	2650	2410	2280	2150	1720	153	2300
Hardness as calcium carbonate	--	--	--	ug/l	194000	226000	214000	208000	206000	202000	408000	108000	208000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	1580	2230	2190	2910	3000	2830	2640	100 U	2730
Orthophosphate as P	--	--	--	ug/l	42 R	42 UJ	42 UJ	42 UJ	42 UJ	42 UJ	42 R	42 R	42 UJ
Sulfate	--	--	--	ug/l	8810 J-	16700 J+	16700 J+	25500 J-	26000	26200 J-	63000	826	23100 J-

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFMW-045a	CFMW-047	CFMW-049	CFMW-049a	CFMW-050	CFMW-053	CFMW-053a	CFMW-054	CFMW-056
					Sample Date:	9/19/2016	9/14/2016	9/21/2016	9/16/2016	9/19/2016	9/14/2016	9/19/2016	9/14/2016	9/20/2016
					Sample Designation:	CFMW-045a-GW	CFMW-047-GW	CFMW-049-GW	CFMW-049a-GW	CFMW-050-GW	CFMW-053-GW	CFMW-053a-GW	CFMW-054-GW	CFMW-056-GW
					Sample Type:	N	N	N	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit										
Ammonia	--	--	--	ug/l	72 U	72 U	72 U	74.6 J	72 U	72 U	232	72 U	76.2 J
Chloride	--	--	--	ug/l	2870	2690 J	1780 J-	2300 J-	30 U	2900 J	6360	2600 J	459 J+
Fluoride	**4000**	4000	80	ug/l	2980	2160	861	470 J-	811	1990	15 U	1920	138
Hardness as calcium carbonate	--	--	--	ug/l	214000	208000	188000	700000	192000	212000	2220000	220000	202000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	100 U	1300	759	442	307	2810	100 U	2620	100 U
Orthophosphate as P	--	--	--	ug/l	42 R	42 UJ	42 UJ	42 R	42 R	42 UJ	42 R	42 UJ	42 U
Sulfate	--	--	--	ug/l	21500	10300 J+	3550	4710 J-	3320	24800	1570	22300	4530

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table T4. General Chemistry in Groundwater
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFMW-056	CFMW-056a	CFMW-056b	CFMW-057	CFMW-057a	CFMW-059	CFMW-059a	CFMW-061	CFMW-064
				Sample Date:	9/20/2016	9/20/2016	9/13/2016	9/19/2016	9/19/2016	9/15/2016	9/19/2016	9/15/2016	9/15/2016
				Sample Designation:	CFMW-DUP3-GW	CFMW-056a-GW	CFMW-056b-GW	CFMW-057-GW	CFMW-057a-GW	CFMW-059-GW	CFMW-059a-GW	CFMW-061-GW	CFMW-064-GW
				Sample Type:	FD	N	N	N	N	N	N	N	N
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--	--	--	ug/l	80.9 J	72 U	72 U	209	500	72 U	211	72 U	72 U
Chloride	--	--	--	ug/l	386	17900	3160	630	6520	30400 J-	4270	2350 J-	2100 J-
Fluoride	**4000**	4000	80	ug/l	131	405	156	66.6 J	15 U	59.5 J	147	780	303
Hardness as calcium carbonate	--	--	--	ug/l	202000	102000	250000	124000	1800000	236000	1060000	200000	198000
Nitrate Nitrite as N	**10000**	10000	--	ug/l	100 U	100 U	443	100 U	100 U	3180	100 U	113	346
Orthophosphate as P	--	--	--	ug/l	42 U	42 U	42 UJ	42 R	42 R	42 UJ	42 R	42 UJ	42 UJ
Sulfate	--	--	--	ug/l	4430	96400	27000	797	1080	6980	12400	7720	4560

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

APPENDIX U

USEPA Vapor Intrusion Screening Level (VISL) Calculator

Preliminary - Under EPA and MDEQ Review

Table U. USEPA Vapor Intrustion Screening Level Calculator
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

EPA-OLEM VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (^{o}C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
75-07-0	Acetaldehyde		--	--	--	2.20E-06	I	9.00E-03	I	
67-64-1	Acetone	1.0E+01	1.43E-02	No IUR	4.4E-07			3.10E+01	A	
75-05-8	Acetonitrile		--	--	--			6.00E-02	I	
107-02-8	Acrolein		--	--	--			2.00E-05	I	
79-10-7	Acrylic Acid		--	--	--			1.00E-03	I	
107-13-1	Acrylonitrile		--	--	--	6.80E-05	I	2.00E-03	I	
309-00-2	Aldrin		--	--	--	4.90E-03	I			
107-18-6	Allyl Alcohol		--	--	--			1.00E-04	X	
107-05-1	Allyl Chloride		--	--	--	6.00E-06	CA	1.00E-03	I	
7664-41-7	Ammonia		--	--	--			1.00E-01	I	
75-85-4	Amyl Alcohol, tert-		--	--	--			3.00E-03	X	
12674-11-2	Aroclor 1016		--	--	--	2.00E-05	S			
11104-28-2	Aroclor 1221		--	--	--	5.70E-04	S			
11141-16-5	Aroclor 1232		--	--	--	5.70E-04	S			
53469-21-9	Aroclor 1242		--	--	--	5.70E-04	S			
12672-29-6	Aroclor 1248		--	--	--	5.70E-04	S			
11097-69-1	Aroclor 1254		--	--	--	5.70E-04	S			
11096-82-5	Aroclor 1260		--	--	--	5.70E-04	S			
103-33-3	Azobenzene		--	--	--	3.10E-05	I			
56-55-3	Benz[a]anthracene		--	--	--	1.10E-04	CA			Mut
71-43-2	Benzene	0.0E+00	0.00E+00	0.0E+00	0.0E+00	7.80E-06	I	3.00E-02	I	
100-44-7	Benzyl Chloride		--	--	--	4.90E-05	CA	1.00E-03	P	
92-52-4	Biphenyl, 1,1'-		--	--	--			4.00E-04	X	
111-44-4	Bis(2-chloroethyl)ether		--	--	--	3.30E-04	I			
542-88-1	Bis(chloromethyl)ether		--	--	--	6.20E-02	I			
10294-34-5	Boron Trichloride		--	--	--			2.00E-02	P	
7637-07-2	Boron Trifluoride		--	--	--			1.30E-02	CA	
107-04-0	Bromo-2-chloroethane, 1-		--	--	--	6.00E-04	X			
108-86-1	Bromobenzene		--	--	--			6.00E-02	I	
74-97-5	Bromochloromethane		--	--	--			4.00E-02	X	
75-27-4	Bromodichloromethane		--	--	--	3.70E-05	CA			
75-25-2	Bromoform		--	--	--	1.10E-06	I			
74-83-9	Bromomethane		--	--	--			5.00E-03	I	
106-99-0	Butadiene, 1,3-		--	--	--	3.00E-05	I	2.00E-03	I	
78-92-2	Butyl alcohol, sec-		--	--	--			3.00E+01	P	
75-15-0	Carbon Disulfide	3.0E+00	1.77E+00	No IUR	2.4E-03			7.00E-01	I	
56-23-5	Carbon Tetrachloride		--	--	--	6.00E-06	I	1.00E-01	I	
463-58-1	Carbonyl Sulfide		--	--	--			1.00E-01	P	
12789-03-6	Chlordane		--	--	--	1.00E-04	I	7.00E-04	I	
7782-50-5	Chlorine		--	--	--			1.50E-04	A	
10049-04-4	Chlorine Dioxide		--	--	--			2.00E-04	I	
75-68-3	Chloro-1,1-difluoroethane, 1-		--	--	--			5.00E+01	I	
126-99-8	Chloro-1,3-butadiene, 2-		--	--	--	3.00E-04	I	2.00E-02	I	
108-90-7	Chlorobenzene		--	--	--			5.00E-02	P	
98-56-6	Chlorobenzotrifluoride, 4-		--	--	--			3.00E-01	P	
75-45-6	Chlorodifluoromethane		--	--	--			5.00E+01	I	
67-66-3	Chloroform		--	--	--	2.30E-05	I	9.80E-02	A	
74-87-3	Chloromethane		--	--	--			9.00E-02	I	
107-30-2	Chloromethyl Methyl Ether		--	--	--	6.90E-04	CA			
76-06-2	Chloropicrin		--	--	--			4.00E-04	CA	
8007-45-2	Coke Oven Emissions		--	--	--	6.20E-04	I			Mut

Preliminary - Under EPA and MDEQ Review

Table U. USEPA Vapor Intrustion Screening Level Calculator
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

EPA-OLEM VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (^{o}C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
98-82-8	Cumene		--	--	--			4.00E-01	I	
57-12-5	Cyanide (CN-)		--	--	--			8.00E-04	S	
110-82-7	Cyclohexane		--	--	--			6.00E+00	I	
108-94-1	Cyclohexanone		--	--	--			7.00E-01	P	
110-83-8	Cyclohexene		--	--	--			1.00E+00	X	
72-55-9	DDE, p,p'-		--	--	--	9.70E-05	CA			
96-12-8	Dibromo-3-chloropropane, 1,2-		--	--	--	6.00E-03	P	2.00E-04	I	Mut
106-93-4	Dibromoethane, 1,2-		--	--	--	6.00E-04	I	9.00E-03	I	
74-95-3	Dibromomethane (Methylene Bromide)		--	--	--			4.00E-03	X	
764-41-0	Dichloro-2-butene, 1,4-		--	--	--	4.20E-03	P			
1476-11-5	Dichloro-2-butene, cis-1,4-		--	--	--	4.20E-03	P			
110-57-6	Dichloro-2-butene, trans-1,4-		--	--	--	4.20E-03	P			
95-50-1	Dichlorobenzene, 1,2-		--	--	--			2.00E-01	H	
106-46-7	Dichlorobenzene, 1,4-		--	--	--	1.10E-05	CA	8.00E-01	I	
75-71-8	Dichlorodifluoromethane		--	--	--			1.00E-01	X	
75-34-3	Dichloroethane, 1,1-	7.1E-01	1.63E-01	9.3E-08	No RfC	1.60E-06	CA			
107-06-2	Dichloroethane, 1,2-		--	--	--	2.60E-05	I	7.00E-03	P	
75-35-4	Dichloroethylene, 1,1-		--	--	--			2.00E-01	I	
78-87-5	Dichloropropane, 1,2-		--	--	--	1.00E-05	CA	4.00E-03	I	
542-75-6	Dichloropropene, 1,3-		--	--	--	4.00E-06	I	2.00E-02	I	
77-73-6	Dicyclopentadiene		--	--	--			3.00E-04	X	
75-37-6	Difluoroethane, 1,1-		--	--	--			4.00E+01	I	
94-58-6	Dihydrosafrole		--	--	--	1.30E-05	CA			
108-20-3	Diisopropyl Ether		--	--	--			7.00E-01	P	
68-12-2	Dimethylformamide		--	--	--			3.00E-02	I	
57-14-7	Dimethylhydrazine, 1,1-		--	--	--			2.00E-06	X	
540-73-8	Dimethylhydrazine, 1,2-		--	--	--	1.60E-01	CA			
513-37-1	Dimethylvinylchloride		--	--	--	1.30E-05	CA			
123-91-1	Dioxane, 1,4-		--	--	--	5.00E-06	I	3.00E-02	I	
106-89-8	Epichlorohydrin		--	--	--	1.20E-06	I	1.00E-03	I	
106-88-7	Epoxybutane, 1,2-		--	--	--			2.00E-02	I	
111-15-9	Ethoxyethanol Acetate, 2-		--	--	--			6.00E-02	P	
110-80-5	Ethoxyethanol, 2-		--	--	--			2.00E-01	I	
141-78-6	Ethyl Acetate		--	--	--			7.00E-02	P	
140-88-5	Ethyl Acrylate		--	--	--			8.00E-03	P	
75-00-3	Ethyl Chloride (Chloroethane)		--	--	--			1.00E+01	I	
97-63-2	Ethyl Methacrylate		--	--	--			3.00E-01	P	
100-41-4	Ethylbenzene		--	--	--	2.50E-06	CA	1.00E+00	I	
75-21-8	Ethylene Oxide		--	--	--	8.80E-05	CA	3.00E-02	CA	
151-56-4	Ethyleneimine		--	--	--	1.90E-02	CA			
50-00-0	Formaldehyde		--	--	--	1.30E-05	I	9.80E-03	A	
64-18-6	Formic Acid		--	--	--			3.00E-04	X	
98-01-1	Furfural		--	--	--			5.00E-02	H	
765-34-4	Glycidyl		--	--	--			1.00E-03	H	
76-44-8	Heptachlor		--	--	--	1.30E-03	I			
1024-57-3	Heptachlor Epoxide		--	--	--	2.60E-03	I			
39635-31-9	Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)		--	--	--	1.10E-03	E	1.30E-03	E	
118-74-1	Hexachlorobenzene		--	--	--	4.60E-04	I			
38380-08-4	Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)		--	--	--	1.10E-03	E	1.30E-03	E	
69782-90-7	Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)		--	--	--	1.10E-03	E	1.30E-03	E	
52663-72-6	Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)		--	--	--	1.10E-03	E	1.30E-03	E	

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Table U. USEPA Vapor Intrustion Screening Level Calculator
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

EPA-OLEM VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (^{o}C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
32774-16-6	Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)		--	--	--	1.10E+00	E	1.30E-06	E	
87-68-3	Hexachlorobutadiene		--	--	--	2.20E-05	I			
77-47-4	Hexachlorocyclopentadiene		--	--	--			2.00E-04	I	
67-72-1	Hexachloroethane		--	--	--	1.10E-05	CA	3.00E-02	I	
822-06-0	Hexamethylene Diisocyanate, 1,6-		--	--	--			1.00E-05	I	
110-54-3	Hexane, N-		--	--	--			7.00E-01	I	
591-78-6	Hexanone, 2-		--	--	--			3.00E-02	I	
302-01-2	Hydrazine		--	--	--	4.90E-03	I	3.00E-05	P	
7647-01-0	Hydrogen Chloride		--	--	--			2.00E-02	I	
74-90-8	Hydrogen Cyanide		--	--	--			8.00E-04	I	
7664-39-3	Hydrogen Fluoride		--	--	--			1.40E-02	CA	
7783-06-4	Hydrogen Sulfide		--	--	--			2.00E-03	I	
67-63-0	Isopropanol		--	--	--			2.00E-01	P	
7439-97-6	Mercury (elemental)		--	--	--			3.00E-04	I	
126-98-7	Methacrylonitrile		--	--	--			3.00E-02	P	
67-56-1	Methanol		--	--	--			2.00E+01	I	
110-49-6	Methoxyethanol Acetate, 2-		--	--	--			1.00E-03	P	
109-86-4	Methoxyethanol, 2-		--	--	--			2.00E-02	I	
96-33-3	Methyl Acrylate		--	--	--			2.00E-02	P	
78-93-3	Methyl Ethyl Ketone (2-Butanone)		--	--	--			5.00E+00	I	
60-34-4	Methyl Hydrazine		--	--	--	1.00E-03	X	2.00E-05	X	
108-10-1	Methyl Isobutyl Ketone (4-methyl-2-pentanone)		--	--	--			3.00E+00	I	
624-83-9	Methyl Isocyanate		--	--	--			1.00E-03	CA	
80-62-6	Methyl Methacrylate		--	--	--			7.00E-01	I	
25013-15-4	Methyl Styrene (Mixed Isomers)		--	--	--			4.00E-02	H	
1634-04-4	Methyl tert-Butyl Ether (MTBE)		--	--	--	2.60E-07	CA	3.00E+00	I	
75-09-2	Methylene Chloride		--	--	--	1.00E-08	I	6.00E-01	I	Mut
2385-85-5	Mirex		--	--	--	5.10E-03	CA			
64742-95-6	Naphtha, High Flash Aromatic (HFAN)		--	--	--			1.00E-01	P	
91-20-3	Naphthalene		--	--	--	3.40E-05	CA	3.00E-03	I	
13463-39-3	Nickel Carbonyl		--	--	--	2.60E-04	CA	1.40E-05	CA	
98-95-3	Nitrobenzene		--	--	--	4.00E-05	I	9.00E-03	I	
75-52-5	Nitromethane		--	--	--	8.80E-06	P	5.00E-03	P	
79-46-9	Nitropropane, 2-		--	--	--	2.70E-03	H	2.00E-02	I	
62-75-9	Nitrosodimethylamine, N-		--	--	--	1.40E-02	I	4.00E-05	X	Mut
924-16-3	Nitroso-di-N-butylamine, N-		--	--	--	1.60E-03	I			
10595-95-6	Nitrosomethylethylamine, N-		--	--	--	6.30E-03	CA			
111-84-2	Nonane, n-		--	--	--			2.00E-02	P	
32598-14-4	Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)		--	--	--	1.10E-03	E	1.30E-03	E	
74472-37-0	Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)		--	--	--	1.10E-03	E	1.30E-03	E	
31508-00-6	Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)		--	--	--	1.10E-03	E	1.30E-03	E	
65510-44-3	Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)		--	--	--	1.10E-03	E	1.30E-03	E	
57465-28-8	Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)		--	--	--	3.80E+00	E	4.00E-07	E	
109-66-0	Pentane, n-		--	--	--			1.00E+00	P	
75-44-5	Phosgene		--	--	--			3.00E-04	I	
7803-51-2	Phosphine		--	--	--			3.00E-04	I	
123-38-6	Propionaldehyde		--	--	--			8.00E-03	I	
103-65-1	Propyl benzene		--	--	--			1.00E+00	X	
115-07-1	Propylene		--	--	--			3.00E+00	CA	
107-98-2	Propylene Glycol Monomethyl Ether		--	--	--			2.00E+00	I	
75-56-9	Propylene Oxide		--	--	--	3.70E-06	I	3.00E-02	I	

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Table U. USEPA Vapor Intrustion Screening Level Calculator
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

EPA-OLEM VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
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CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
100-42-5	Styrene		--	--	--			1.00E+00	I	
7446-11-9	Sulfur Trioxide		--	--	--			1.00E-03	CA	
1746-01-6	TCDD, 2,3,7,8-		--	--	--	3.80E+01	CA	4.00E-08	CA	
70362-50-4	Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)		--	--	--	1.10E-02	E	1.30E-04	E	
630-20-6	Tetrachloroethane, 1,1,1,2-		--	--	--	7.40E-06	I			
79-34-5	Tetrachloroethane, 1,1,2,2-		--	--	--	5.80E-05	CA			
127-18-4	Tetrachloroethylene	5.6E-01	4.05E-01	3.8E-08	9.7E-03	2.60E-07	I	4.00E-02	I	
811-97-2	Tetrafluoroethane, 1,1,1,2-		--	--	--			8.00E+01	I	
109-99-9	Tetrahydrofuran		--	--	--			2.00E+00	I	
7550-45-0	Titanium Tetrachloride		--	--	--			1.00E-04	A	
108-88-3	Toluene	2.2E+00	5.97E-01	No IUR	1.1E-04			5.00E+00	I	
584-84-9	Toluene-2,4-diisocyanate		--	--	--	1.10E-05	CA	8.00E-06	CA	
91-08-7	Toluene-2,6-diisocyanate		--	--	--	1.10E-05	CA	8.00E-06	CA	
76-13-1	Trichloro-1,2,2-trifluoroethane, 1,1,2-		--	--	--			3.00E+01	H	
120-82-1	Trichlorobenzene, 1,2,4-		--	--	--			2.00E-03	P	
71-55-6	Trichloroethane, 1,1,1-	3.8E+00	2.67E+00	No IUR	5.1E-04			5.00E+00	I	
79-00-5	Trichloroethane, 1,1,2-		--	--	--	1.60E-05	I	2.00E-04	X	
79-01-6	Trichloroethylene	7.6E-01	3.06E-01	6.4E-07	1.5E-01	see note	I	2.00E-03	I	TCE
96-18-4	Trichloropropane, 1,2,3-		--	--	--			3.00E-04	I	Mut
96-19-5	Trichloropropene, 1,2,3-		--	--	--			3.00E-04	P	
121-44-8	Triethylamine		--	--	--			7.00E-03	I	
420-46-2	Trifluoroethane, 1,1,1-		--	--	--			2.00E+01	P	
526-73-8	Trimethylbenzene, 1,2,3-		--	--	--			5.00E-03	P	
95-63-6	Trimethylbenzene, 1,2,4-		--	--	--			7.00E-03	P	
126-72-7	Tris(2,3-dibromopropyl)phosphate		--	--	--	6.60E-04	CA			
108-05-4	Vinyl Acetate		--	--	--			2.00E-01	I	
593-60-2	Vinyl Bromide		--	--	--	3.20E-05	H	3.00E-03	I	
75-01-4	Vinyl Chloride		--	--	--	4.40E-06	I	1.00E-01	I	VC
108-38-3	Xylene, m-		--	--	--			1.00E-01	S	
95-47-6	Xylene, o-		--	--	--			1.00E-01	S	
106-42-3	Xylene, P-		--	--	--			1.00E-01	S	
1330-20-7	Xylenes		--	--	--			1.00E-01	I	

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Averaging time for carcinogens	(yrs)	ATc_R_GW	70	ATc_C_GW	70	ATc_GW	70
Averaging time for non-carcinogens	(yrs)	ATnc_R_GW	26	ATnc_C_GW	25	Atnc_GW	26
Exposure duration	(yrs)	ED_R_GW	26	ED_C_GW	25	ED_GW	26
Exposure frequency	(days/yr)	EF_R_GW	350	EF_C_GW	250	EF_GW	350
Exposure time	(hr/day)	ET_R_GW	24	ET_C_GW	8	ET_GW	24

(2) **Generic Attenuation Factors:**

Source Medium of Vapors		Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Groundwater	(-)	AFgw_R_GW	0.001	AFgw_C_GW	0.001	AFgw_GW	0.001
Sub-Slab and Exterior Soil Gas	(-)	AFss_R_GW	0.03	AFss_C_GW	0.03	AFss_GW	0.03

(3) **Formulas**

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Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.5.1 (May 2016 RSLs)

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (^{o}C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i

Cia, target = MIN(Cia,c; Cia,nc)
Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)
Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

	Residential		Commercial		Selected (based on scenario)	
Trichloroethylene	Symbol	Value	Symbol	Value	Symbol	Value
	mIURTCE_R_GW	1.00E-06	IURTCE_C_GW	0.00E+00	mIURTCE_GW	1.00E-06
	IURTCE_R_GW	3.10E-06	IURTCE_C_GW	4.10E-06	IURTCE_GW	3.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration (years)	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1
Mutagenic-mode-of-action (MMOA) adjustment factor		72

This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:
I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
S = See RSL User Guide, Section 5
X = PPRTV Appendix
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

Preliminary - Under EPA and MDEQ Review

APPENDIX V

Groundwater Thematic Maps

1. Concentrations of Cyanide in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
2. Concentrations of Fluoride in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
3. Concentrations of Aluminum in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
4. Concentrations of Arsenic in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
5. Concentrations of Cobalt in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
6. Concentrations of Copper in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
7. Concentrations of Iron in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
8. Concentrations of Lead in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
9. Concentrations of Manganese in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
10. Concentrations of Thallium in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
11. Concentrations of Ammonia in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
12. Concentrations of Chloride in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit

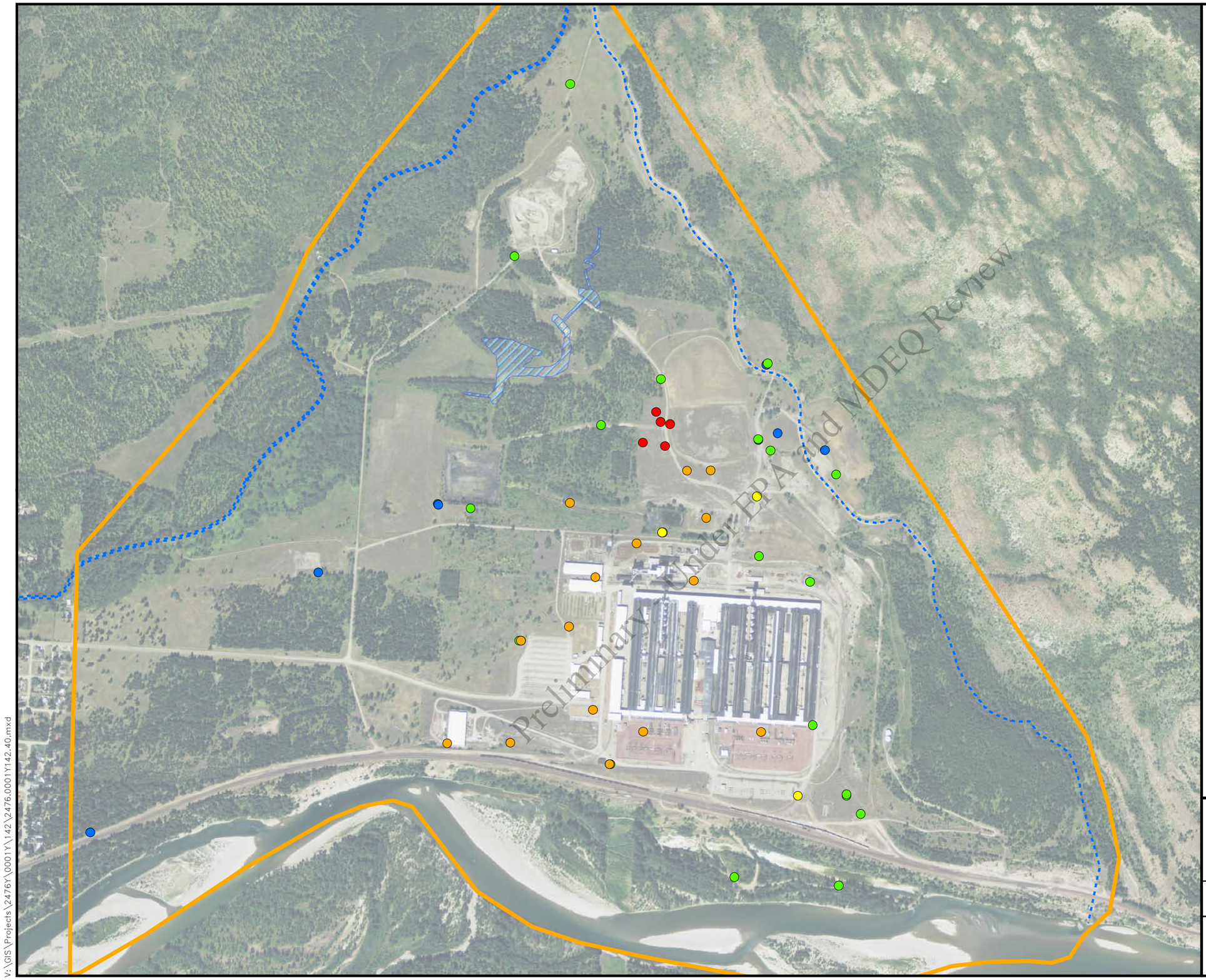
Preliminary - Under EPA and MDEQ Review

13. Concentrations of Calcium Carbonate in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
14. Concentrations of Nitrate in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
15. Concentrations of Orthophosphate in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
16. Concentrations of Sulfate in Groundwater from Monitoring Wells Screened in Upper Hydrogeologic Unit
17. Concentrations of Cyanide in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
18. Concentrations of Fluoride in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
19. Concentrations of Aluminum in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
20. Concentrations of Arsenic in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
21. Concentrations of Cobalt in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
22. Concentrations of Copper in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
23. Concentrations of Iron in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
24. Concentrations of Lead in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
25. Concentrations of Manganese in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
26. Concentrations of Thallium in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit

Preliminary - Under EPA and MDEQ Review

27. Concentrations of Ammonia in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
28. Concentrations of Chloride in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
29. Concentrations of Calcium in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
30. Concentrations of Nitrate in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
31. Concentrations of Orthophosphate in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit
32. Concentrations of Sulfate in Groundwater from Monitoring Wells Screened Below Upper Hydrogeologic Unit

Preliminary - Under EPA and MDEQ Review



N

Concentration Legend

- Analyte Not Detected (2U)
- ND – 100
- 100 – 200
- 200 – 2000
- >2000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Cyanide	200	200	0.15

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
2U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF CYANIDE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

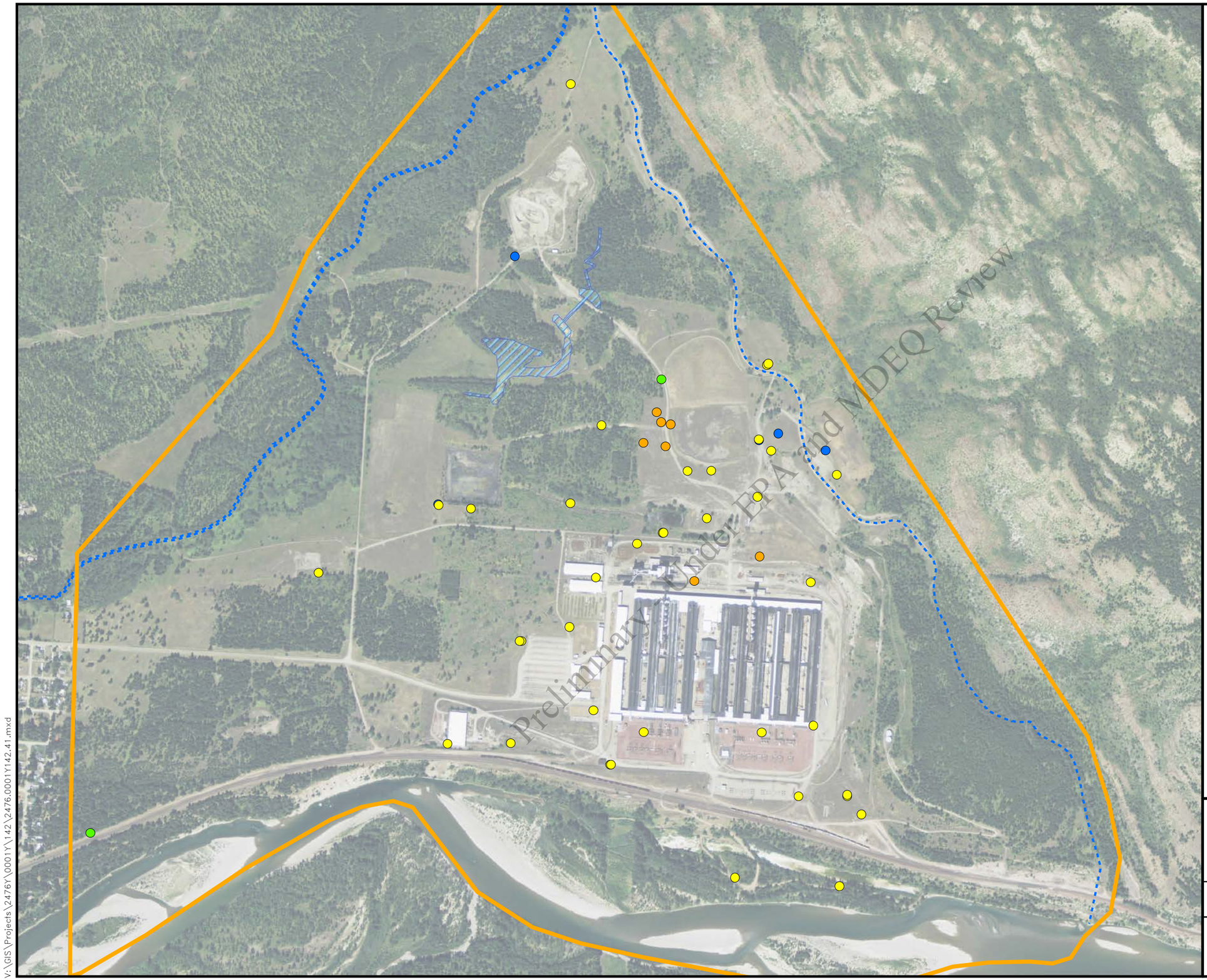
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V1**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.40.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.40.mxd



N

Concentration Legend

- Analyte Not Detected (15U)
- ND – 80
- 80 – 4000
- 4000 – 40000
- >40000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Fluoride	4000	4000	80

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
15U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF FLUORIDE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

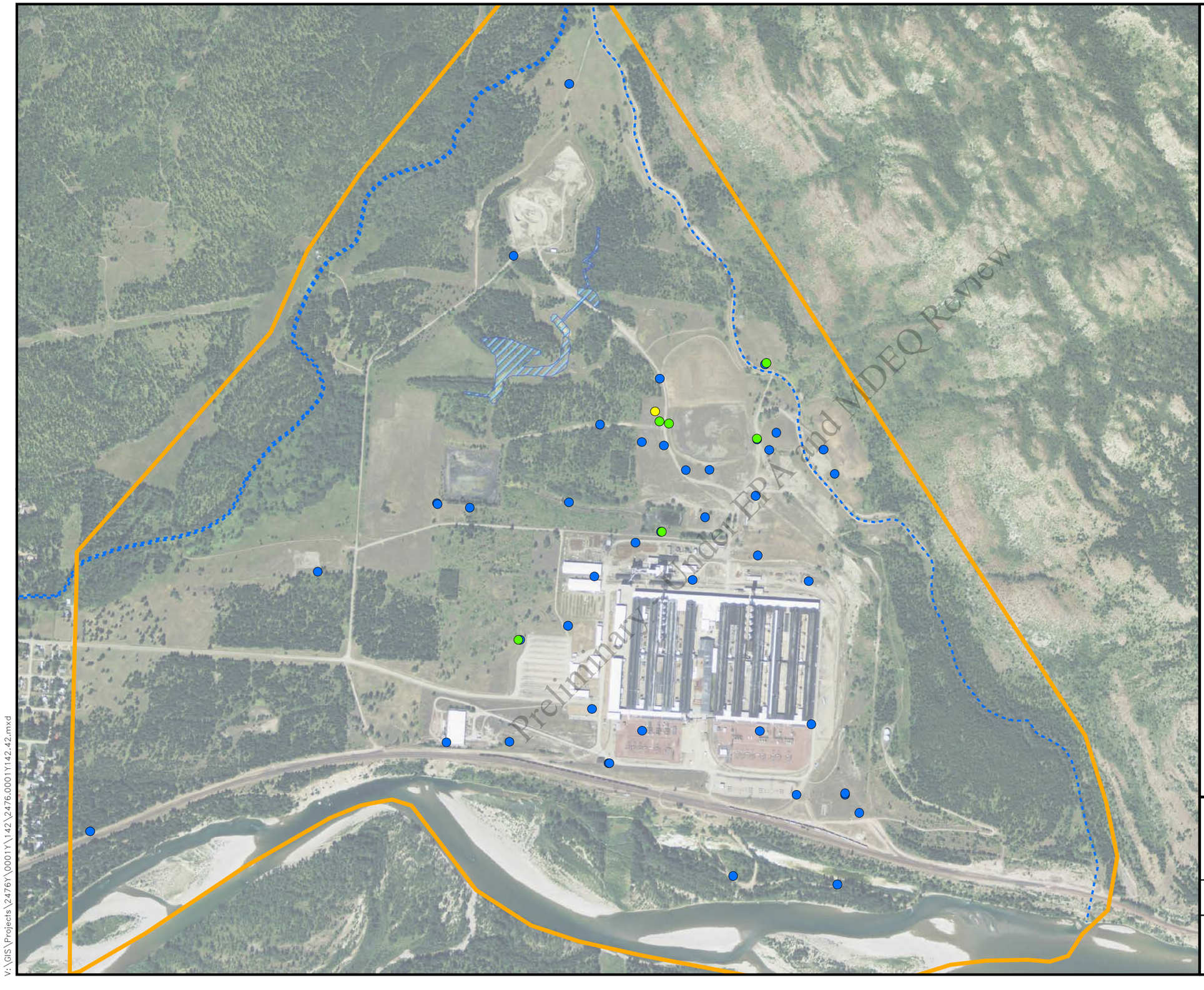
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V2**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.41.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.41.mxd



N

Concentration Legend

- Analyte Not Detected (18.2)
- ND – 1000
- 1000 – 2000
- 2000 – 20000
- >20000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Aluminum	--	--	2000

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
18.2U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF ALUMINUM IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

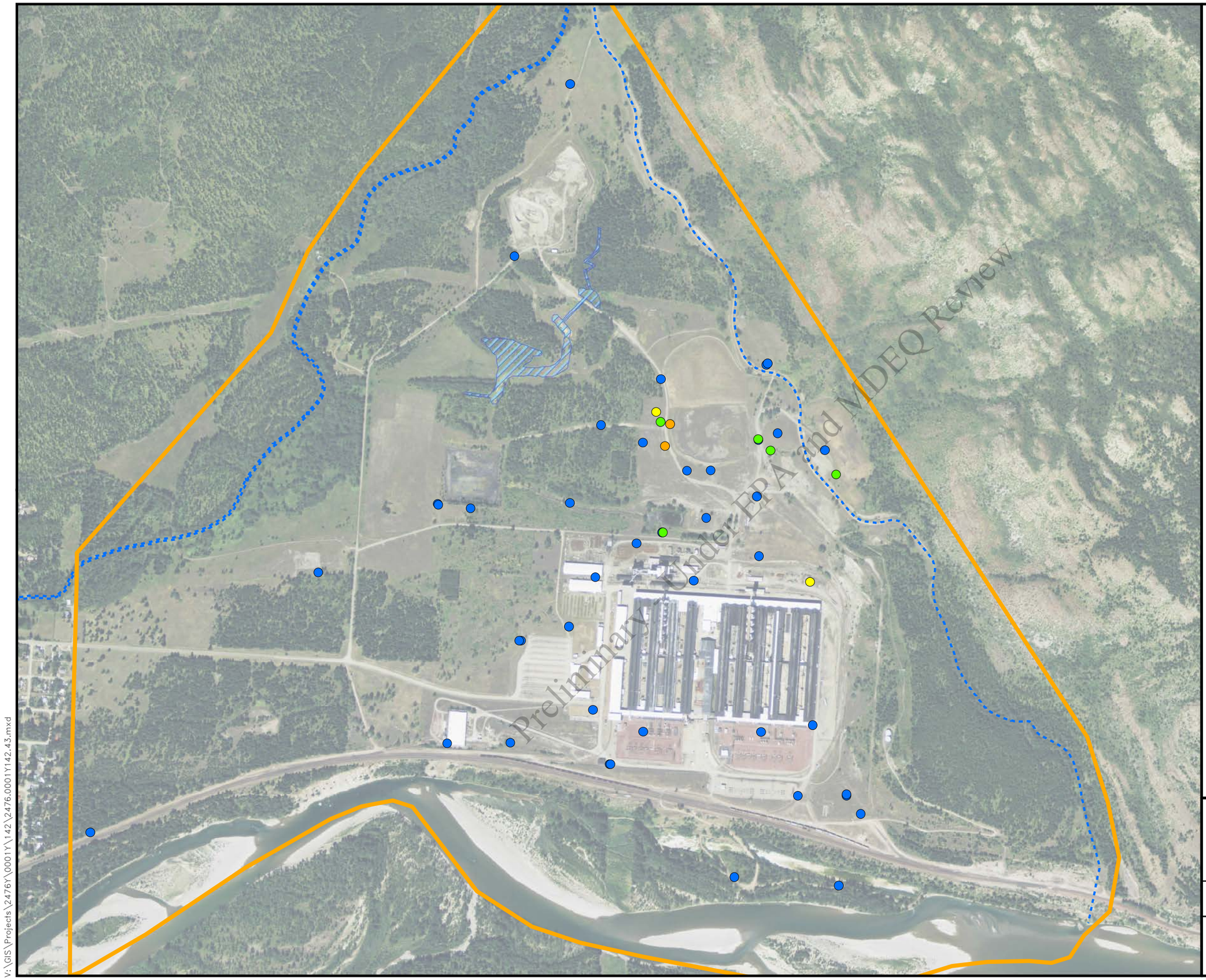
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V3
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.42.mxd		

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N

Concentration Legend

- Analyte Not Detected (0.64U)
- ND – 5
- 5 – 10
- 10 – 100
- >100

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Arsenic	10	10	0.052

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
0.64U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF ARSENIC IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

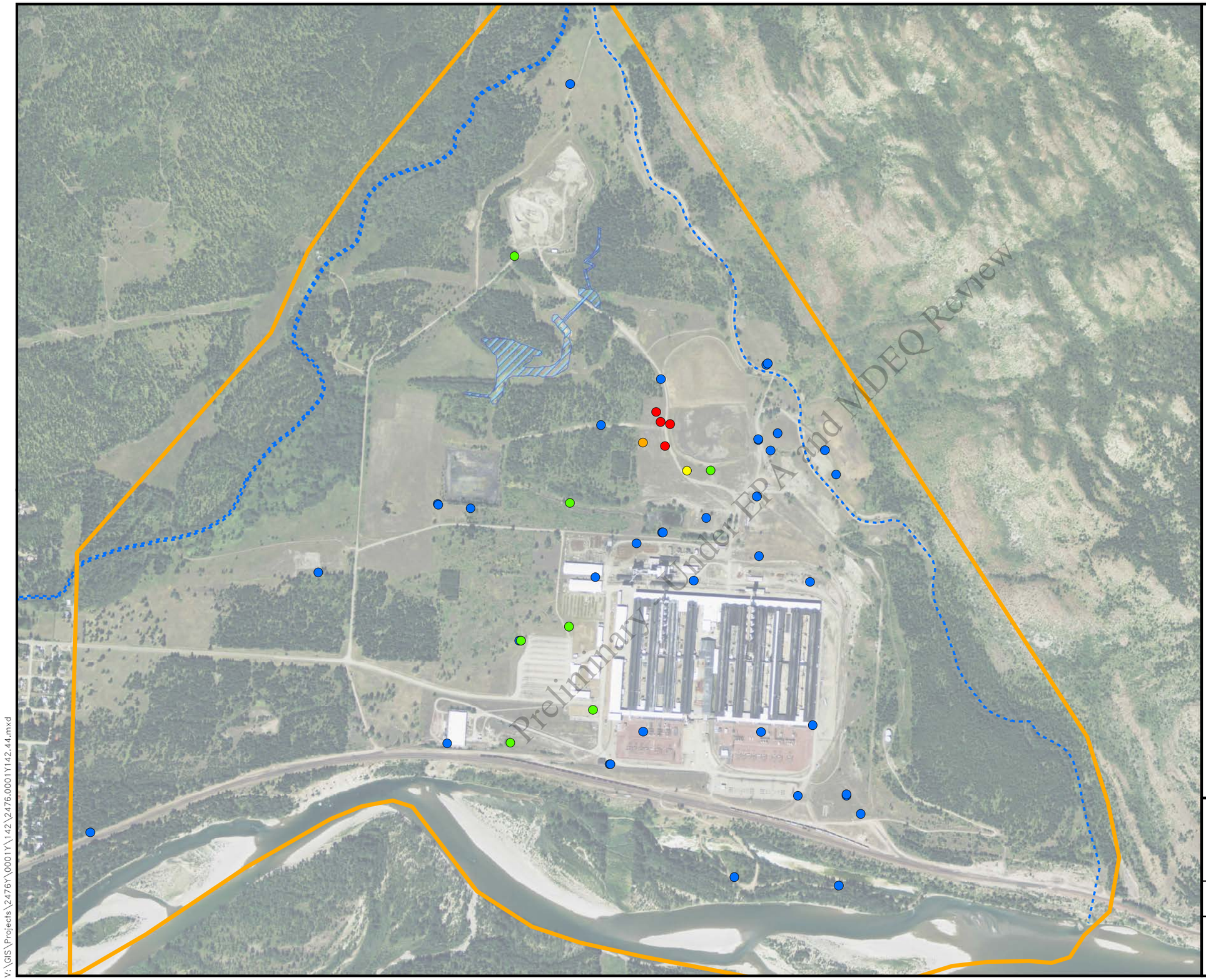
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

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Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.43.mxd	

FIGURE **V4**

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.43.mxd



N

Concentration Legend

- Analyte Not Detected (1.3U)
- ND – 2
- 2 – 4
- 4 – 6
- >6

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Cobalt	--	--	0.6

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
1.3U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF COBALT IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

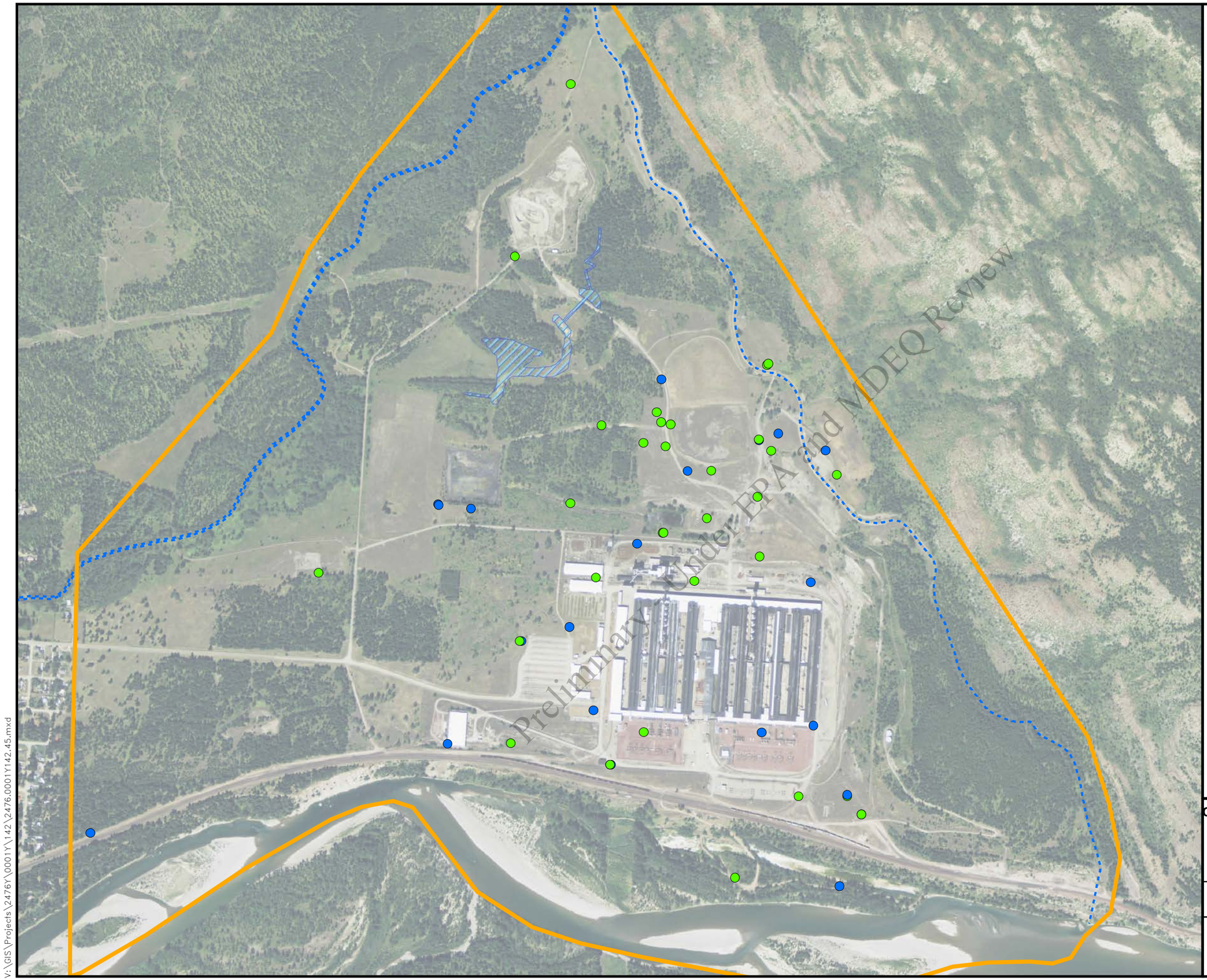
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
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Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.44.mxd	

FIGURE **V5**

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.44.mxd



N

Concentration Legend

- Analyte Not Detected (1.4U)
- ND – 80
- 80 – 1300
- 1300 – 13000
- >13000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Copper	1300	1300	80

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
1.4U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

FIGURE

CONCENTRATIONS OF COPPER IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

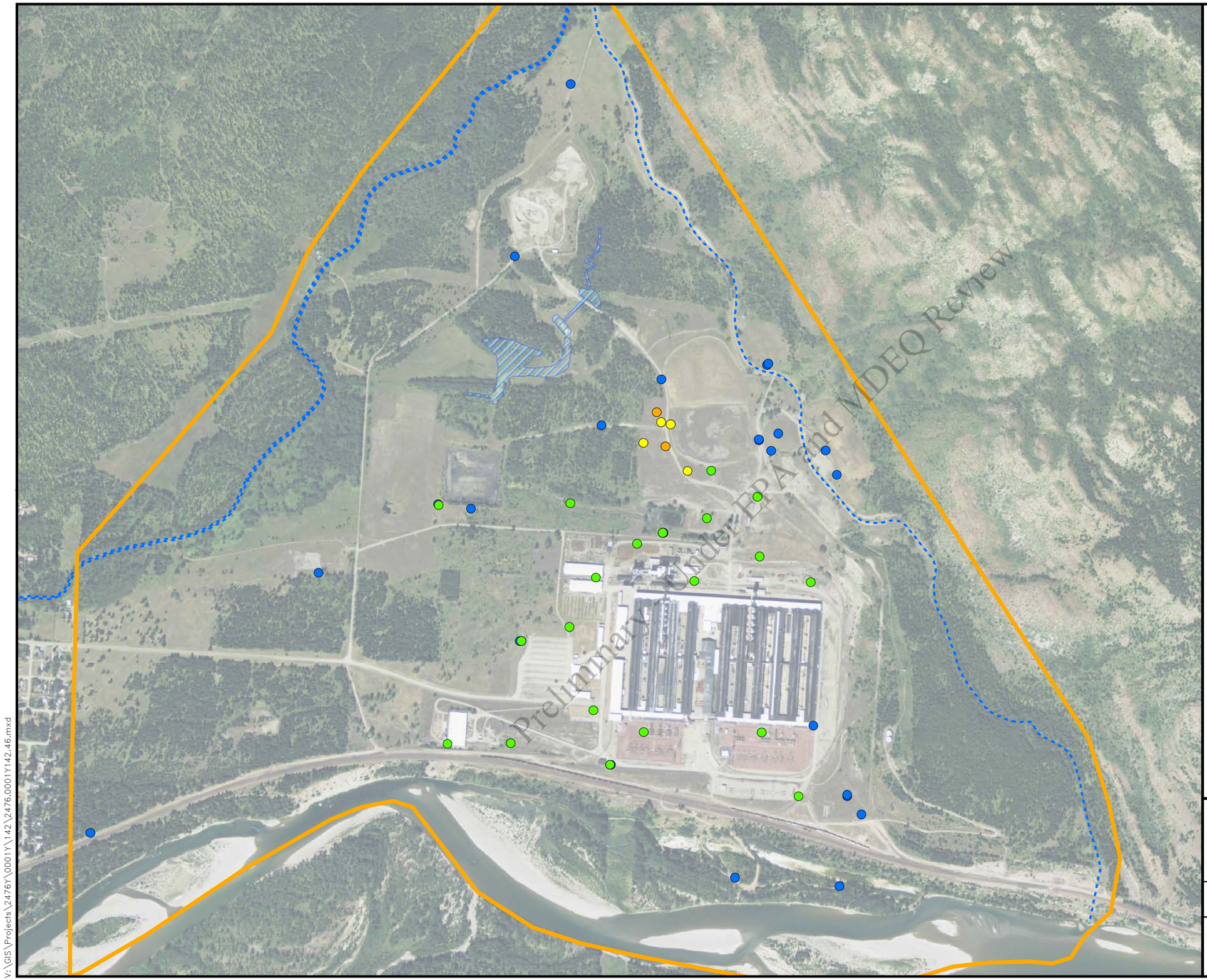
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Compiled by: M.R.	Date: 20FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.45.mxd	

FIGURE **V6**

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.45.mxd



N

Concentration Legend

- Analyte Not Detected (42.4U)
- ND – 700
- 700 – 1400
- 1400 – 14000
- >14000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Iron	--	--	1400

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
42.4U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

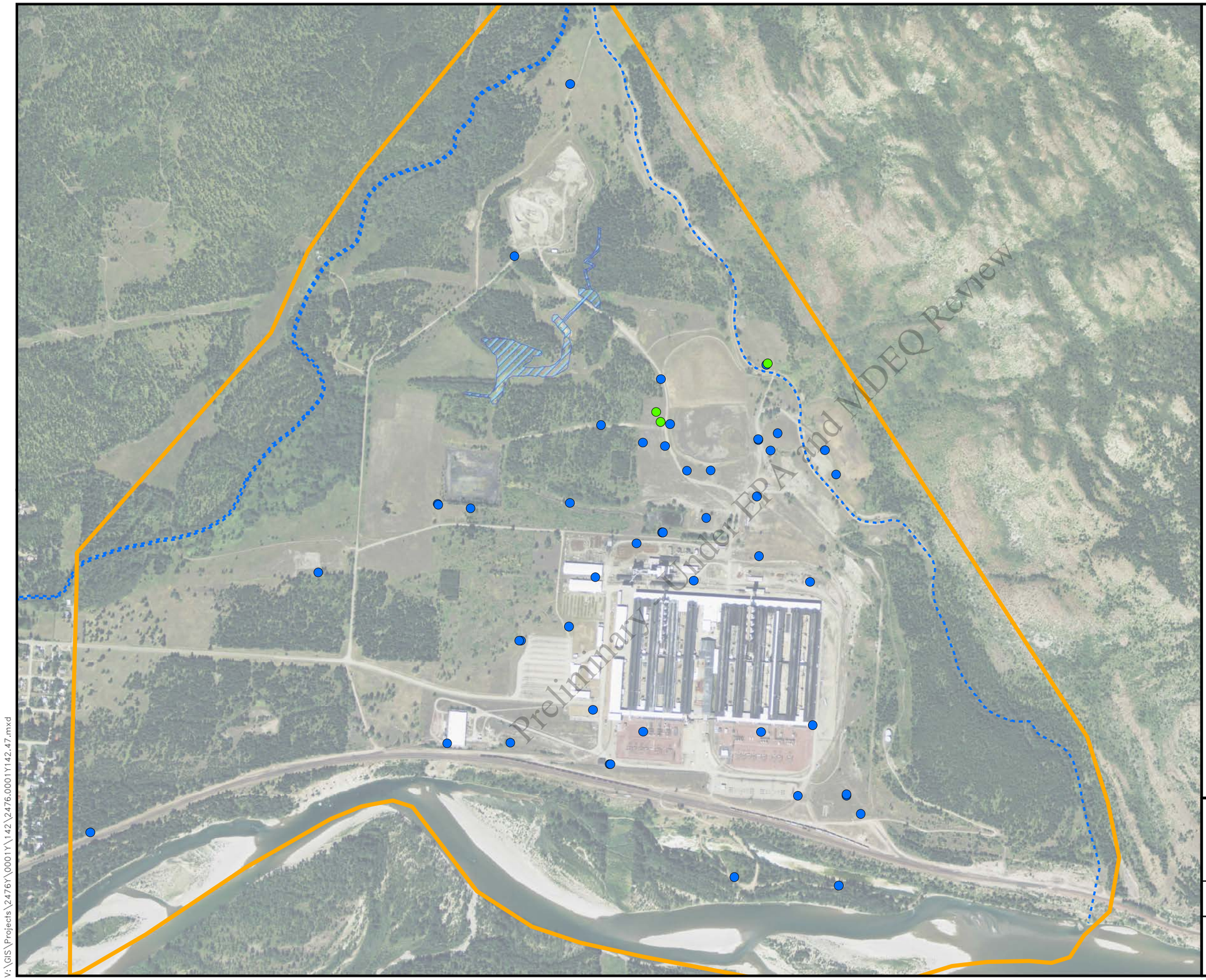
Title:
CONCENTRATIONS OF IRON IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V7
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.46.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.46.mxd



N

Concentration Legend

- Analyte Not Detected (0.38U)
- ND – 7.5
- 7.5 – 15
- 15 – 150
- >150

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Lead	15	15	15

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
0.38U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

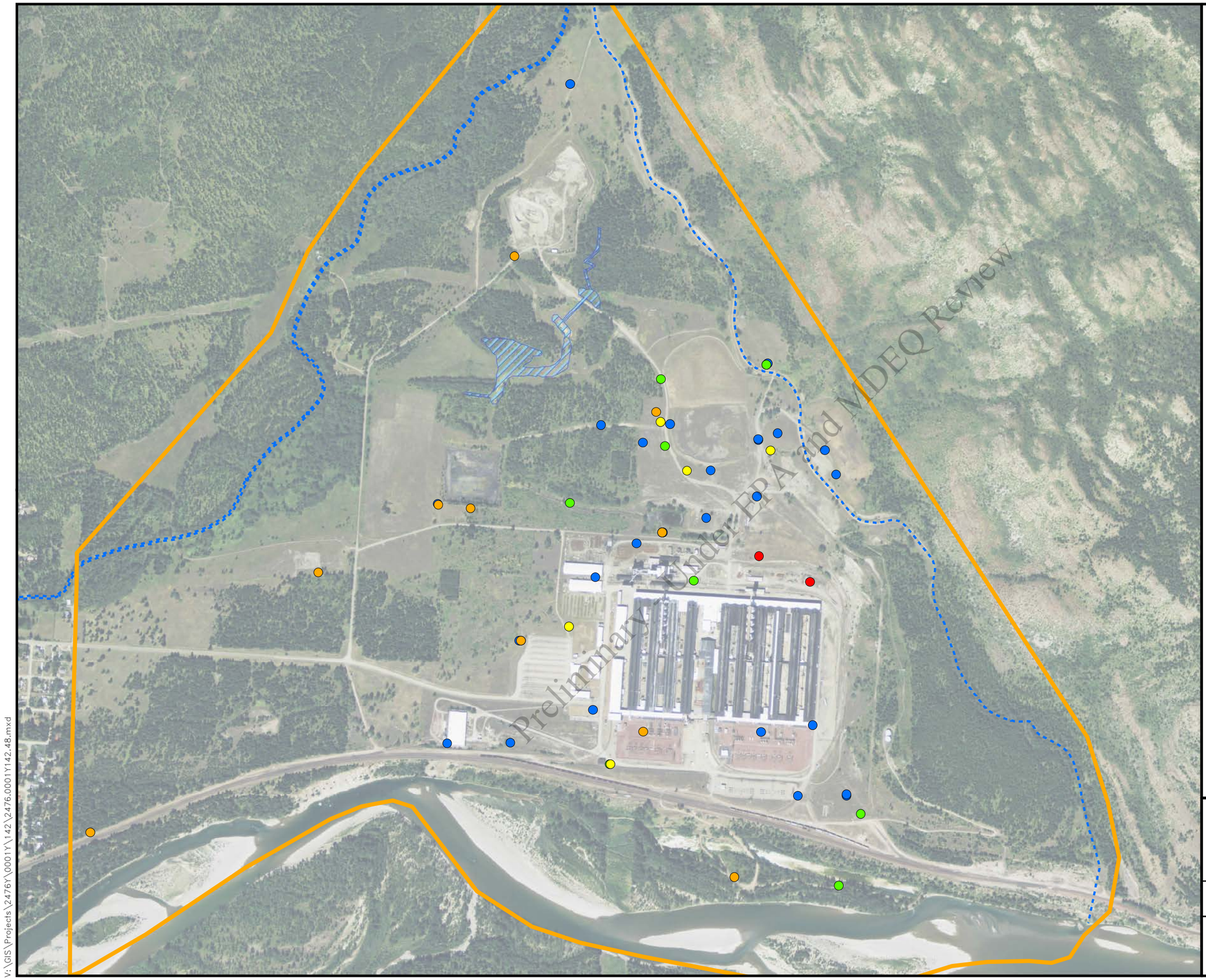
Title:
CONCENTRATIONS OF LEAD IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V8**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.47.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.47.mxd



N

Concentration Legend

- Analyte Not Detected (2.5U)
- ND – 21.5
- 21.5 – 43
- 43 – 430
- >430

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Manganese	--	--	43

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
2.5U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF MANGANESE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

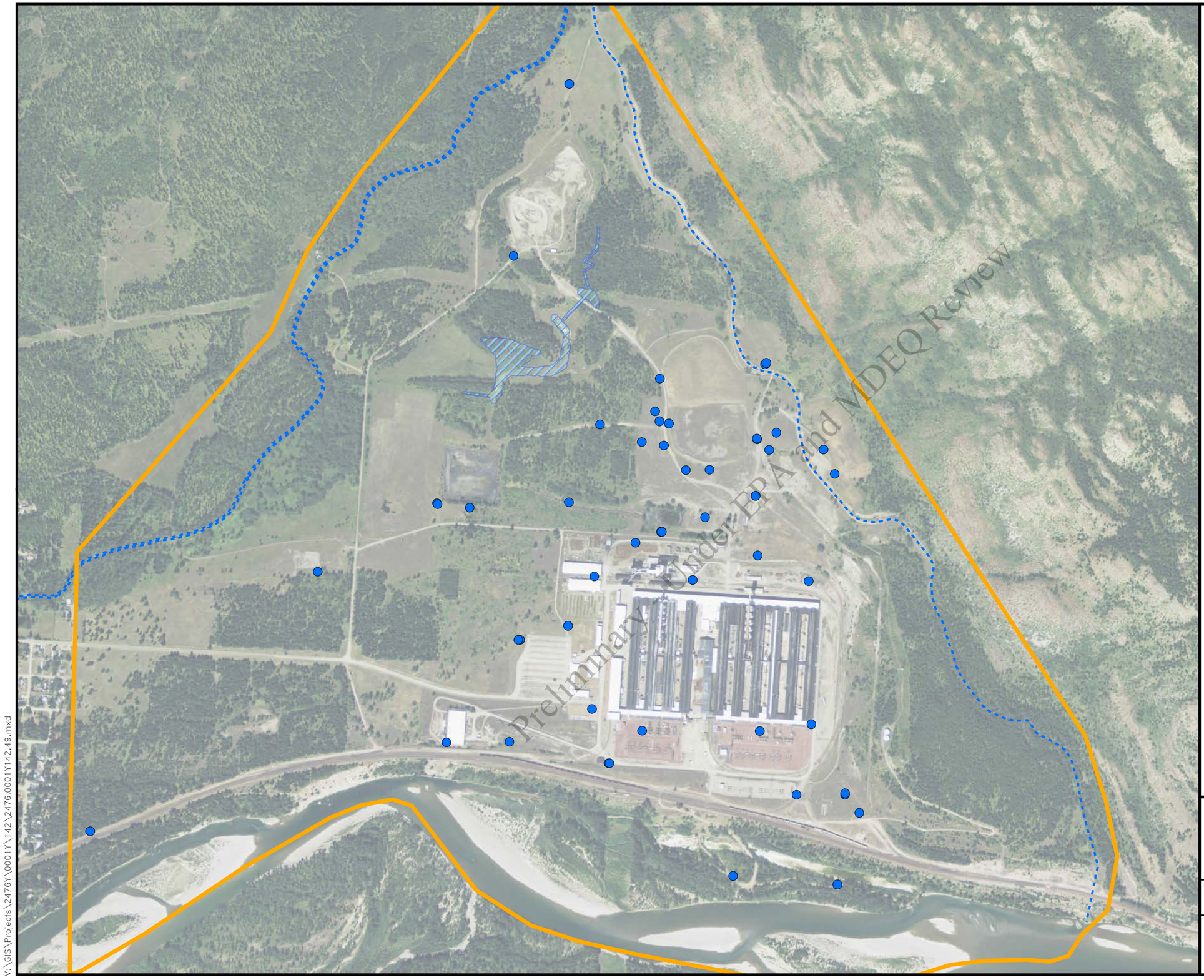
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V9
Project Mgr: M.R.	V9	
File: 2476.0001Y142.48.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.48.mxd



N

Concentration Legend

- Analyte Not Detected (0.26U)
- ND – 1
- 1 – 2
- 2 – 20
- >20

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Thallium	2	2	0.02

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
0.26U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF THALLIUM IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

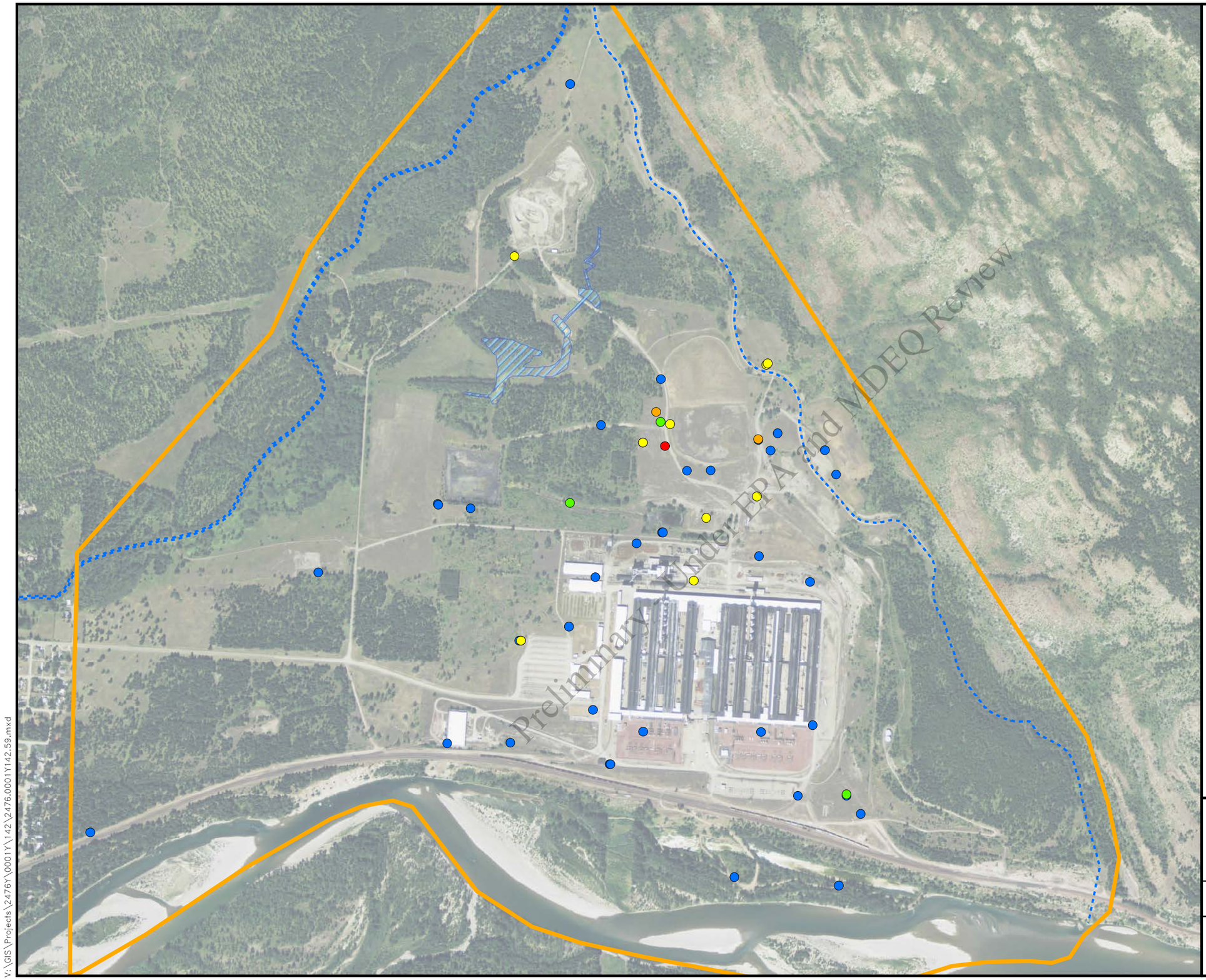
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Prepared For:
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V10
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.49.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.49.mxd



N

Concentration Legend

- Analyte Not Detected (72U)
- ND – 100
- 100 – 500
- 500 – 5000
- >5000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Ammonia	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
72U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF AMMONIA IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

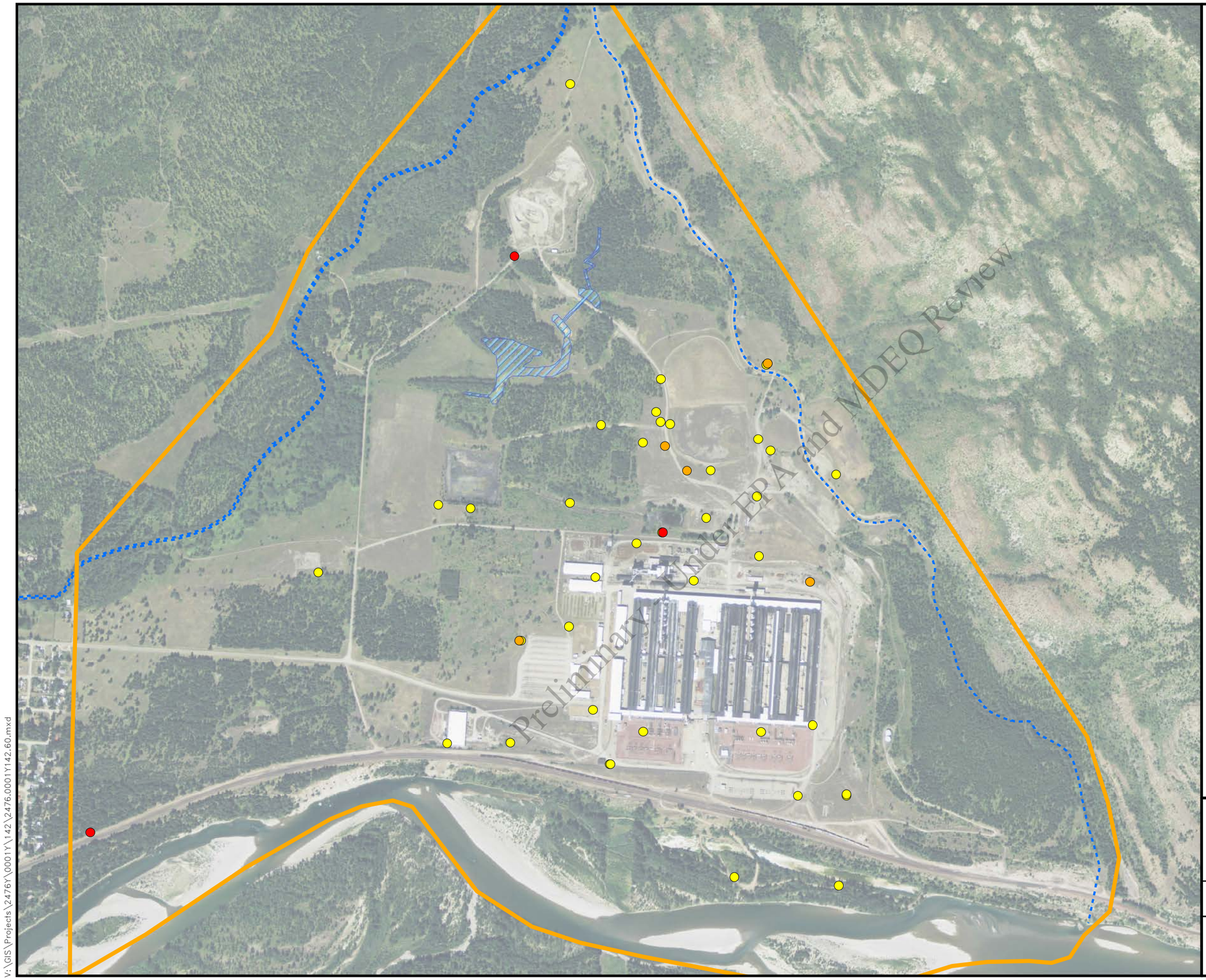
2000 ALUMINUM DRIVE
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Prepared For:
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V11
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.59.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.59.mxd



N

Concentration Legend

- Analyte Not Detected
- ND – 459
- 459 – 5000
- 5000 – 10000
- >10000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Chloride	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title: **CONCENTRATIONS OF CHLORIDE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

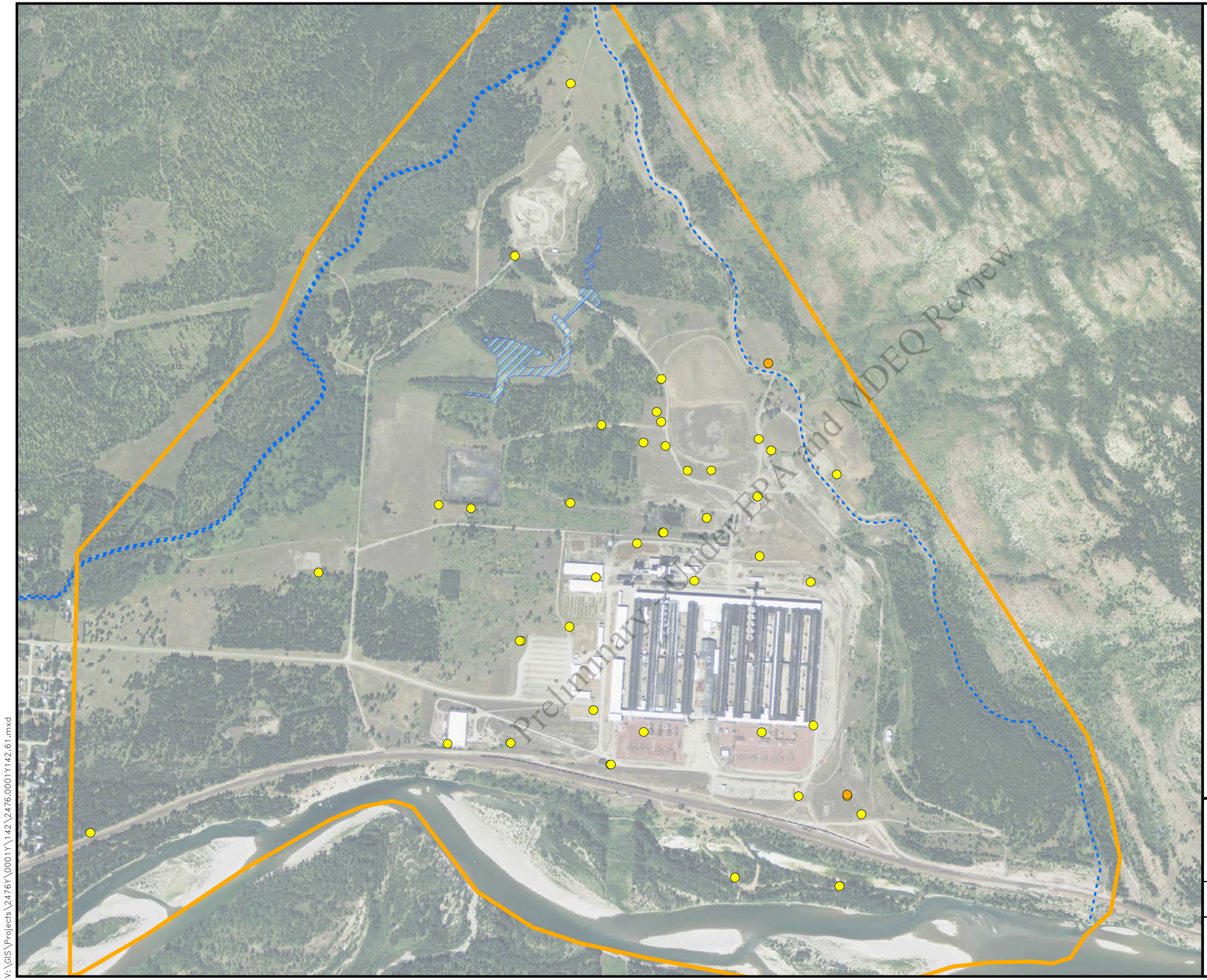
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Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V12
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.60.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.60.mxd



N

Concentration Legend

- Analyte Not Detected
- ND – 150000
- 15000 – 500000
- 500000 – 1000000
- >1000000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Hardness as Calcium Carbonate	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title: **CONCENTRATIONS OF HARDNESS AS CALCIUM CARBONATE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

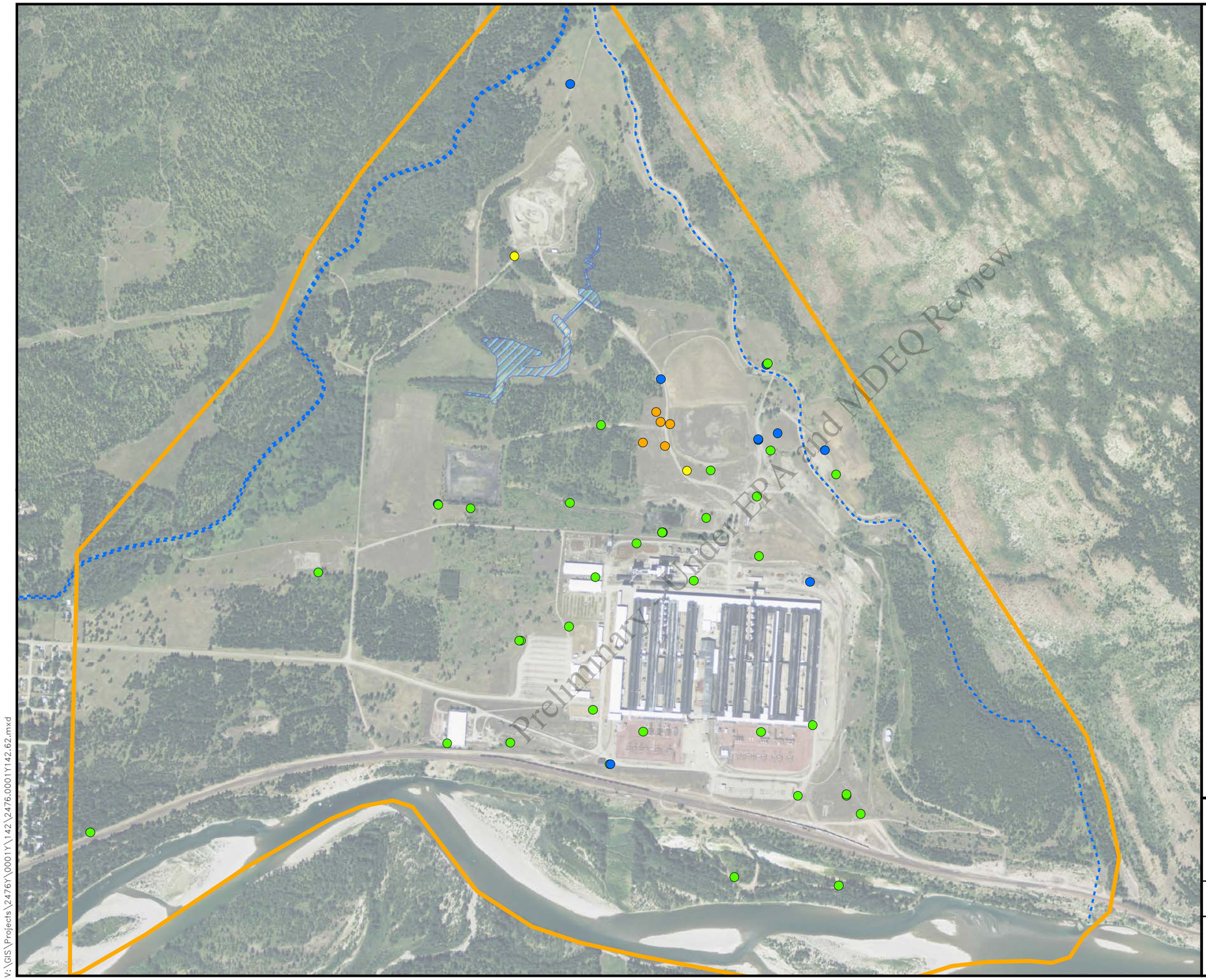
2000 ALUMINUM DRIVE
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Compiled by: M.R.	Date: 20FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V13**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.61.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.61.mxd



N

Concentration Legend

- Analyte Not Detected (100U)
- ND – 5000
- 5000 – 10000
- 10000 – 100000
- >100000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Nitrate	--	10000	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
100U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF NITRATE + NITRITE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

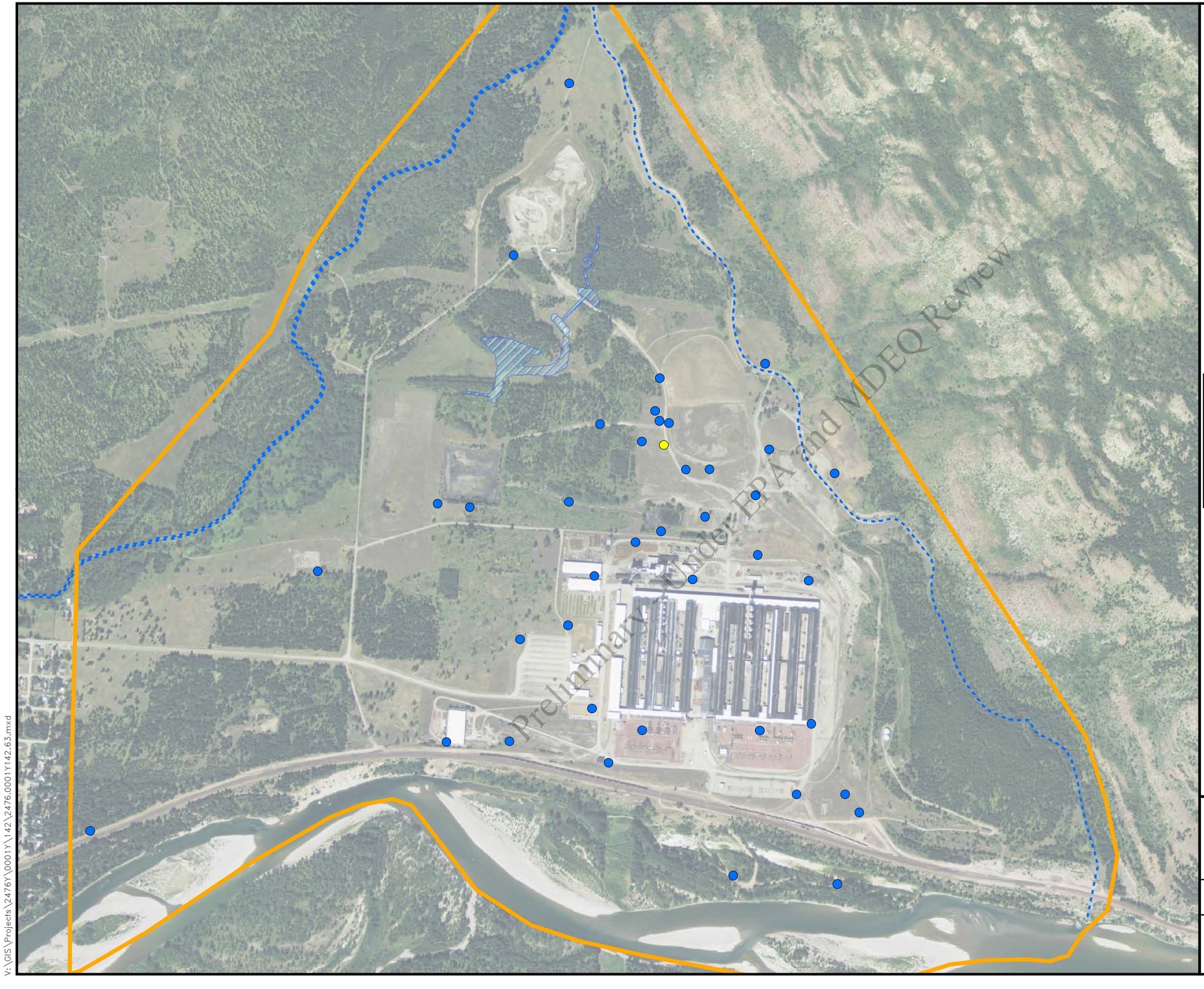
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 23FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V14**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.62.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.62.mxd



N

Concentration Legend

- Analyte Not Detected (42U)
- ND – 100
- 100 – 500
- 500 – 5000
- >5000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Orthophosphate as P	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
42U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF ORTHOPOSPHATE AS P IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

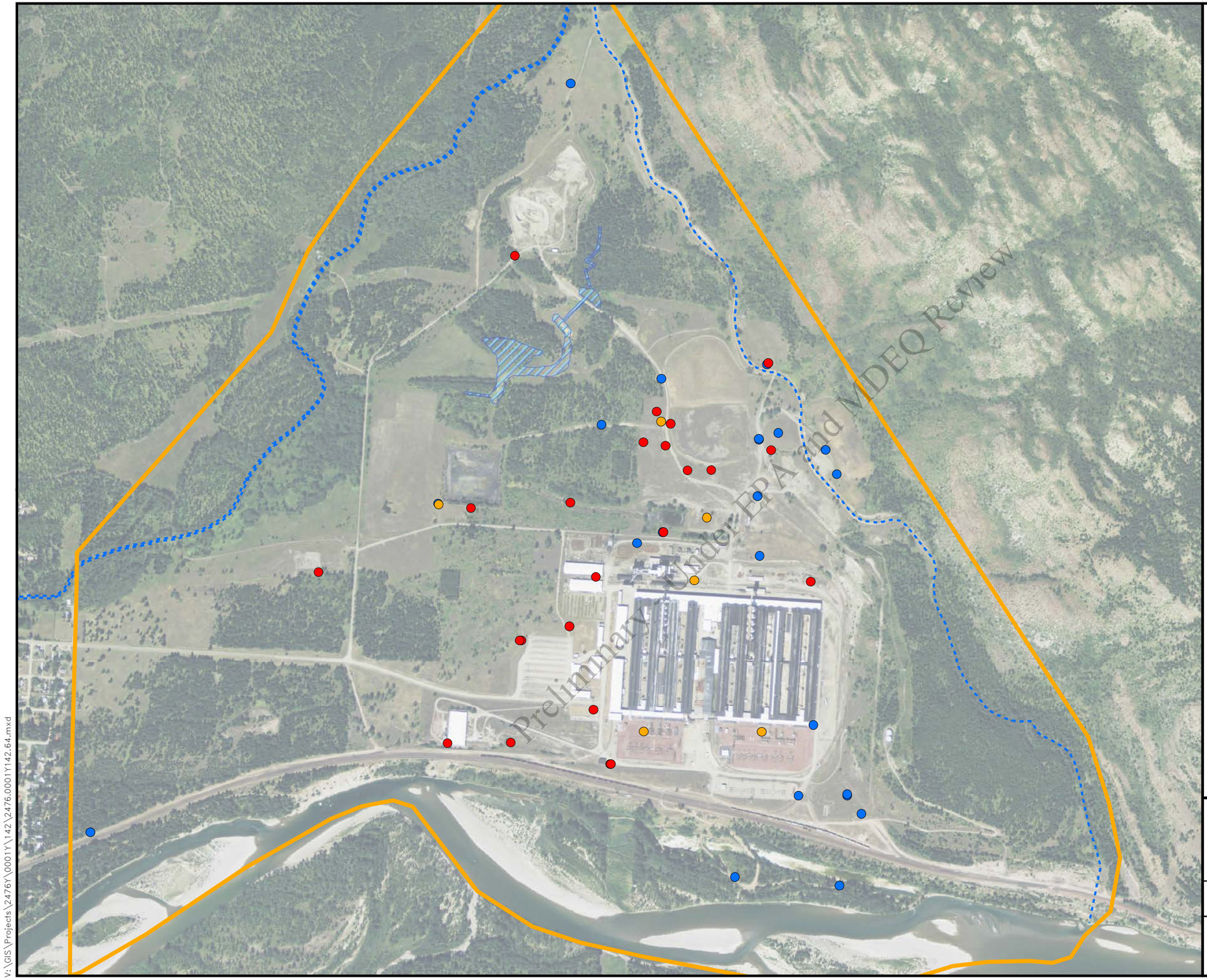
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V15**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.63.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.63.mxd



N

Concentration Legend

- Analyte Not Detected
- ND – 5000
- 5000 – 10000
- 10000 – 20000
- >20000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Sulfate	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title: **CONCENTRATIONS OF SULFATE IN GROUNDWATER FROM MONITORING WELLS SCREENED IN UPPER HYDROGEOLOGIC UNIT**

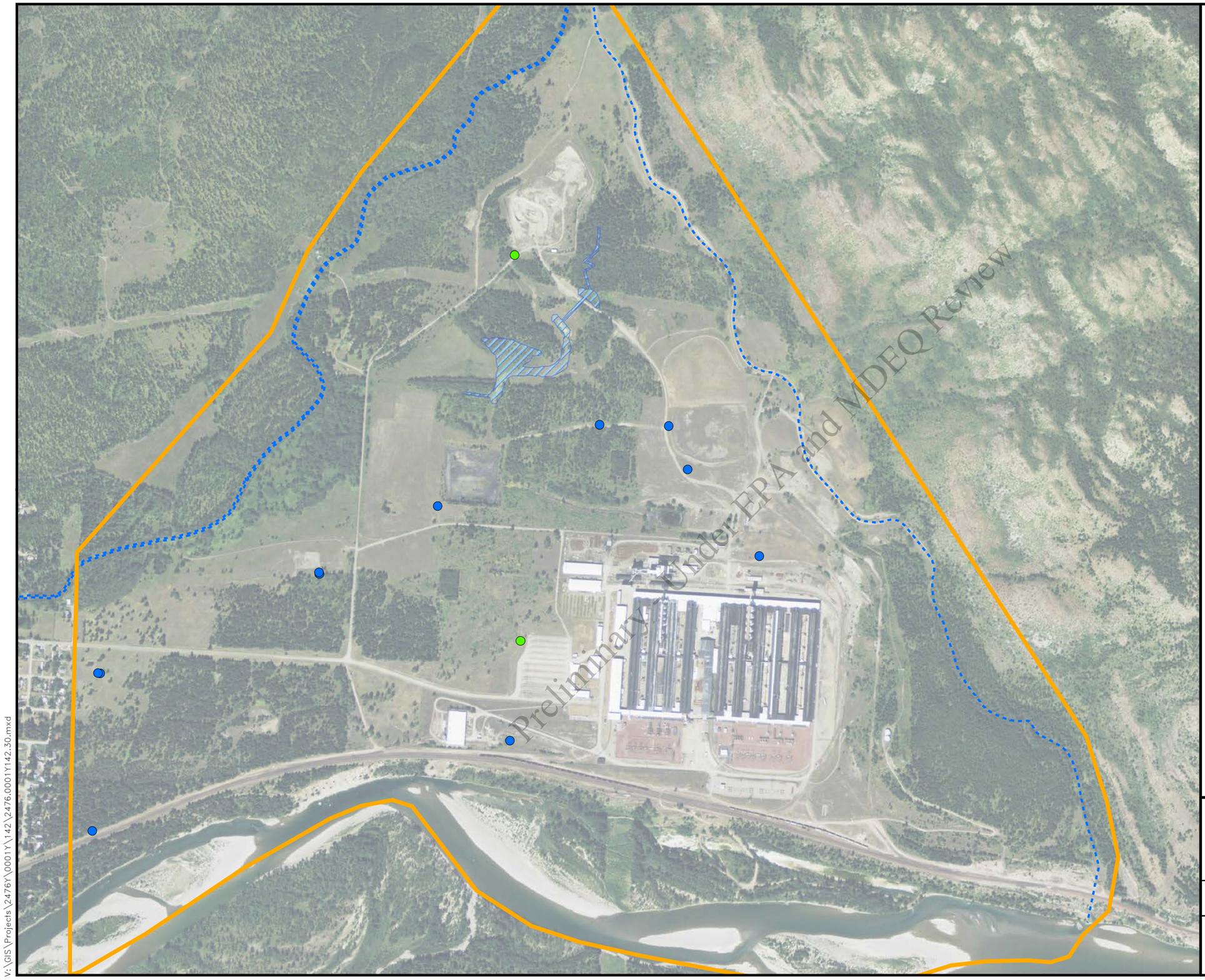
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V16
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.64.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.64.mxd



N

Concentration Legend

- Analyte Not Detected (2U)
- ND – 100
- 100 – 200
- 200 – 2000
- >2000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Cyanide	200	200	0.15

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
2U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF CYANIDE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

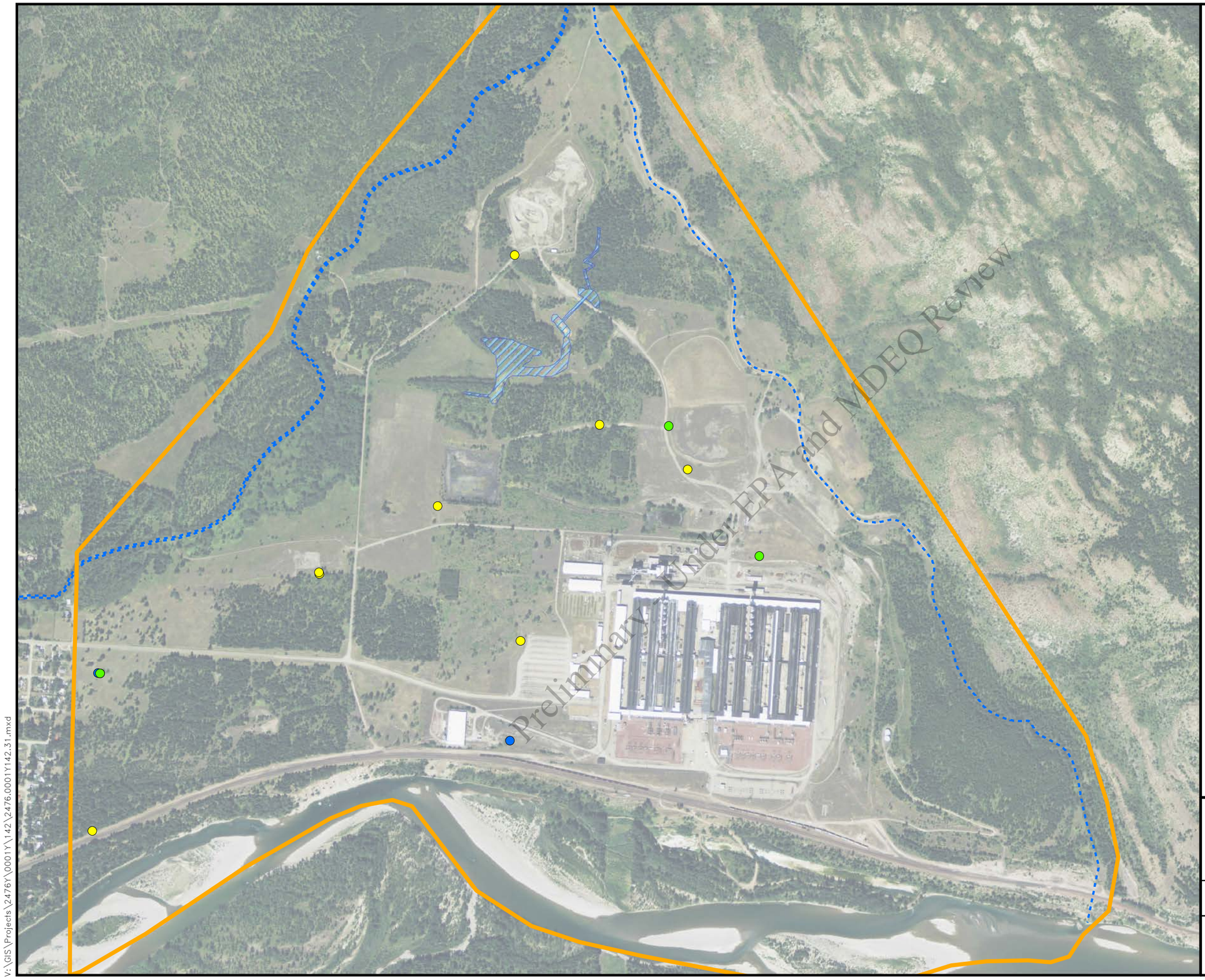
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V17
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.30.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.30.mxd



N

Concentration Legend

- Analyte Not Detected (15U)
- ND – 80
- 80 – 4000
- 4000 – 40000
- >40000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Fluoride	4000	4000	80

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
15U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF FLUORIDE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

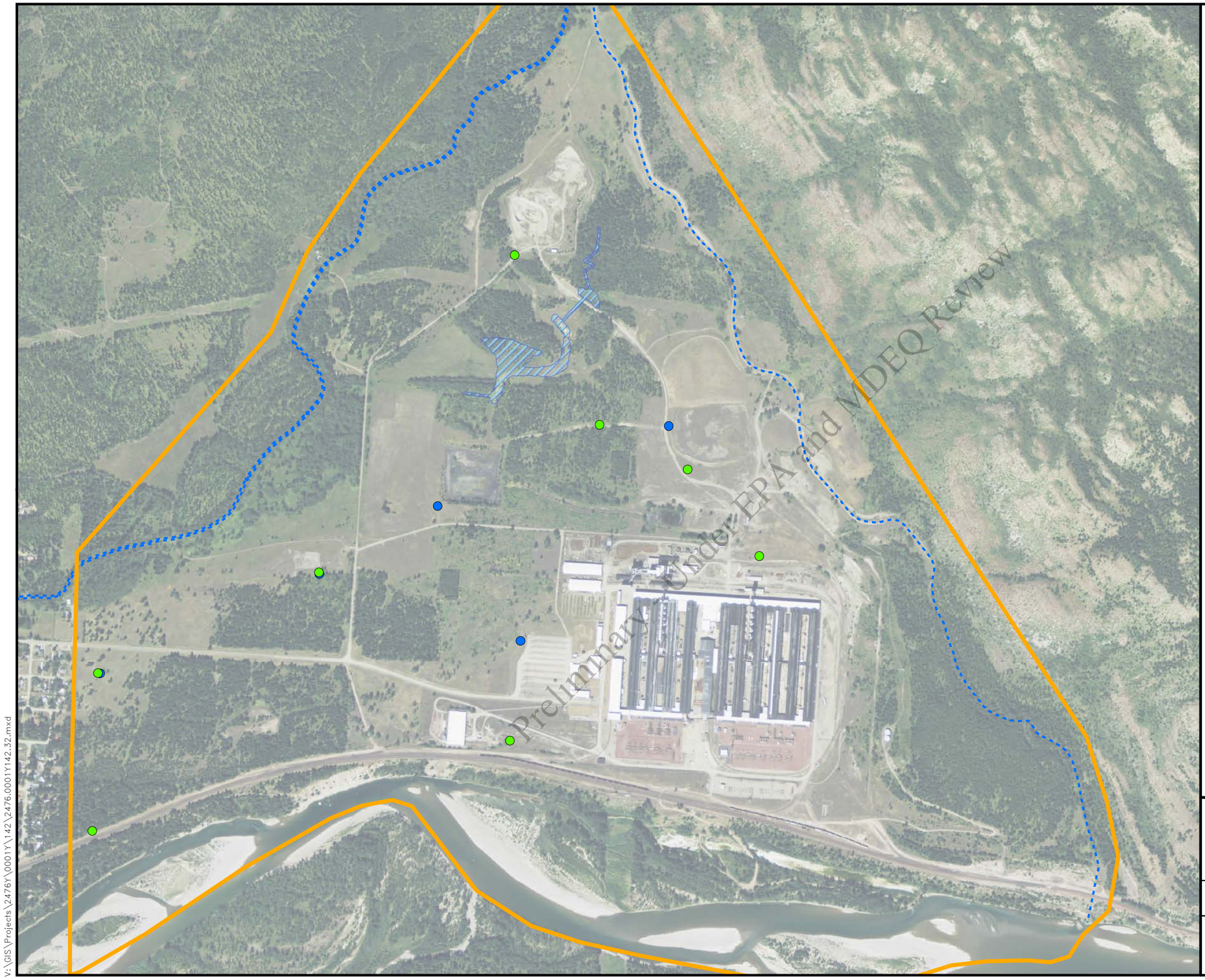
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V18
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.31.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.31.mxd



N

Concentration Legend

- Analyte Not Detected (18.2)
- ND – 1000
- 1000 – 2000
- 2000 – 20000
- >20000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Aluminum	--	--	2000

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
18.2U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF ALUMINUM IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

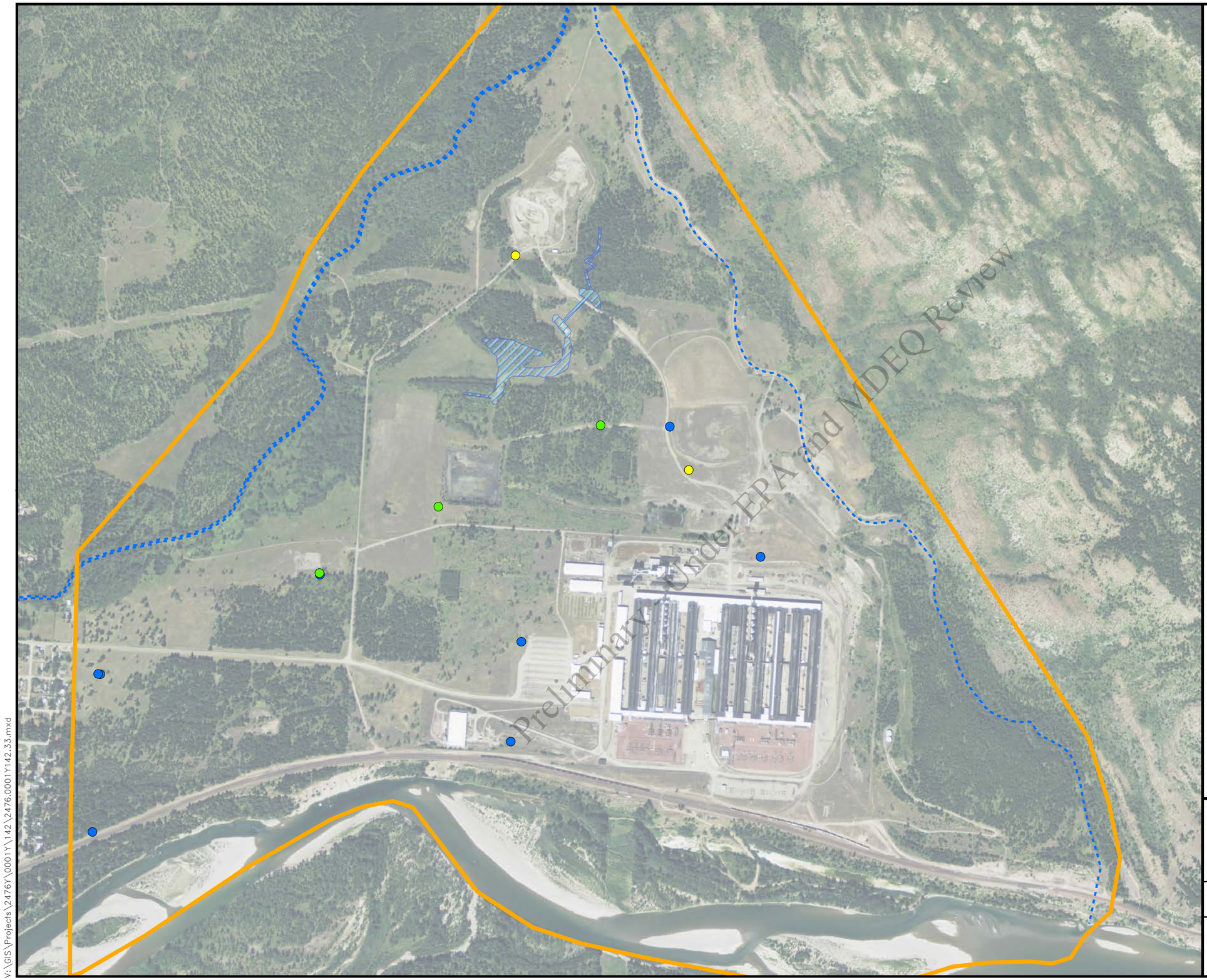
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V19
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.32.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.32.mxd



N

Concentration Legend

- Analyte Not Detected (0.64U)
- ND – 5
- 5 – 10
- 10 – 100
- >100

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Arsenic	10	10	0.052

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
0.64U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:
CONCENTRATIONS OF ARSENIC IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT

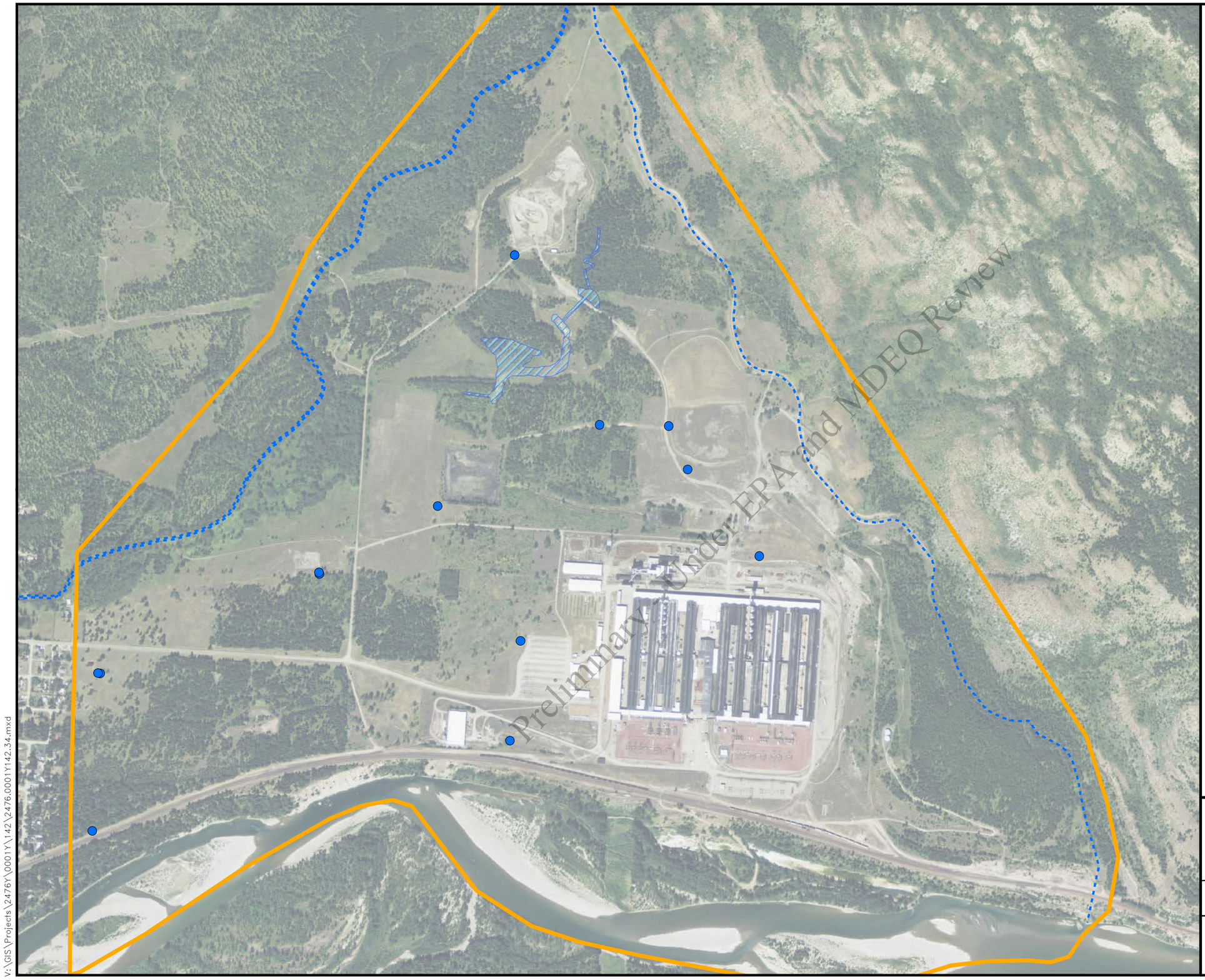
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V20
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.33.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.33.mxd



N

Concentration Legend

- Analyte Not Detected (1.3U)
- ND – 2
- 2 – 4
- 4 – 6
- >6

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Cobalt	--	--	0.6

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
1.3U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF COBALT IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

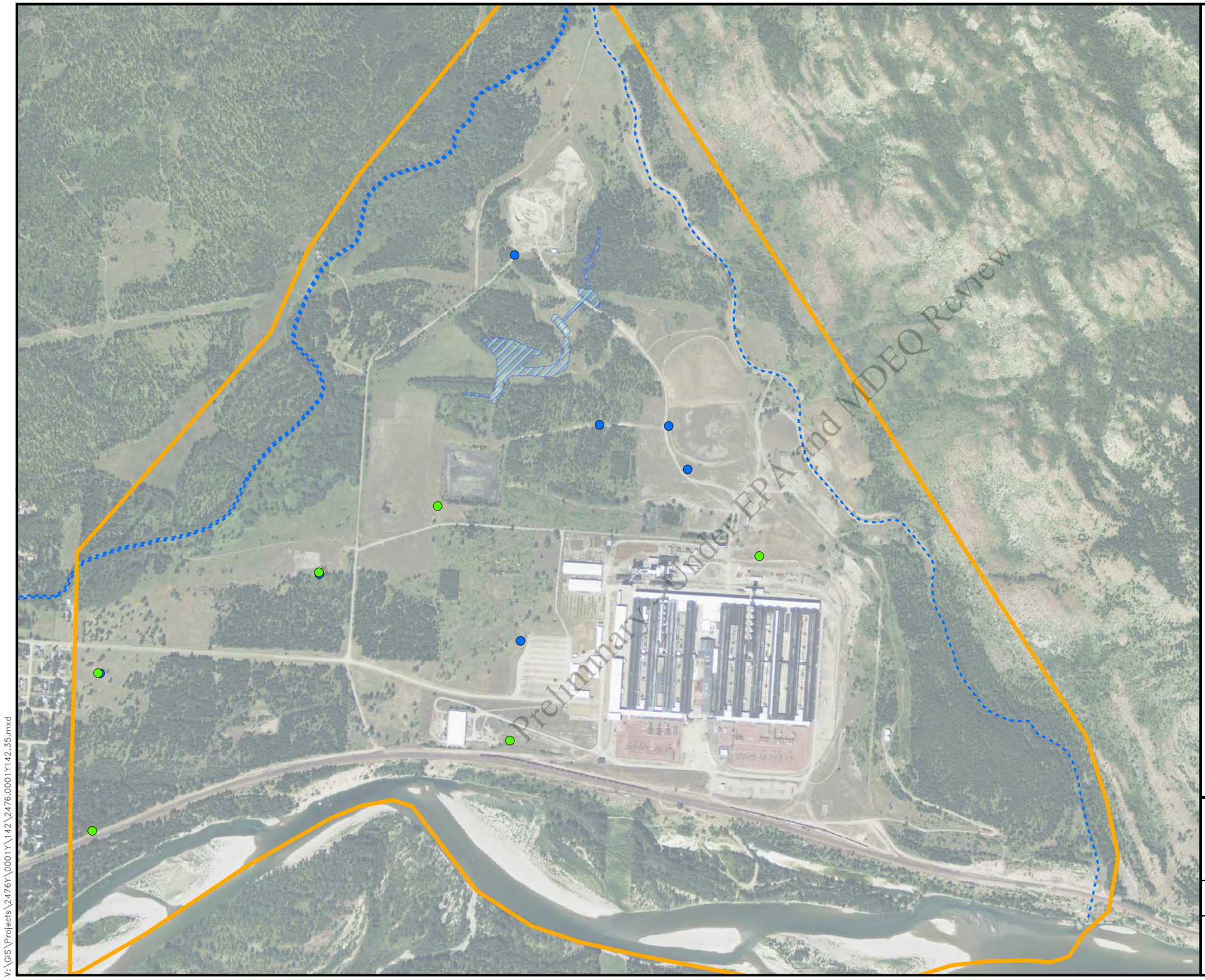
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V21
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.34.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.34.mxd



N

Concentration Legend

- Analyte Not Detected (1.4U)
- ND – 80
- 80 – 1300
- 1300 – 13000
- >13000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Copper	1300	1300	80

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
1.4U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF COPPER IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

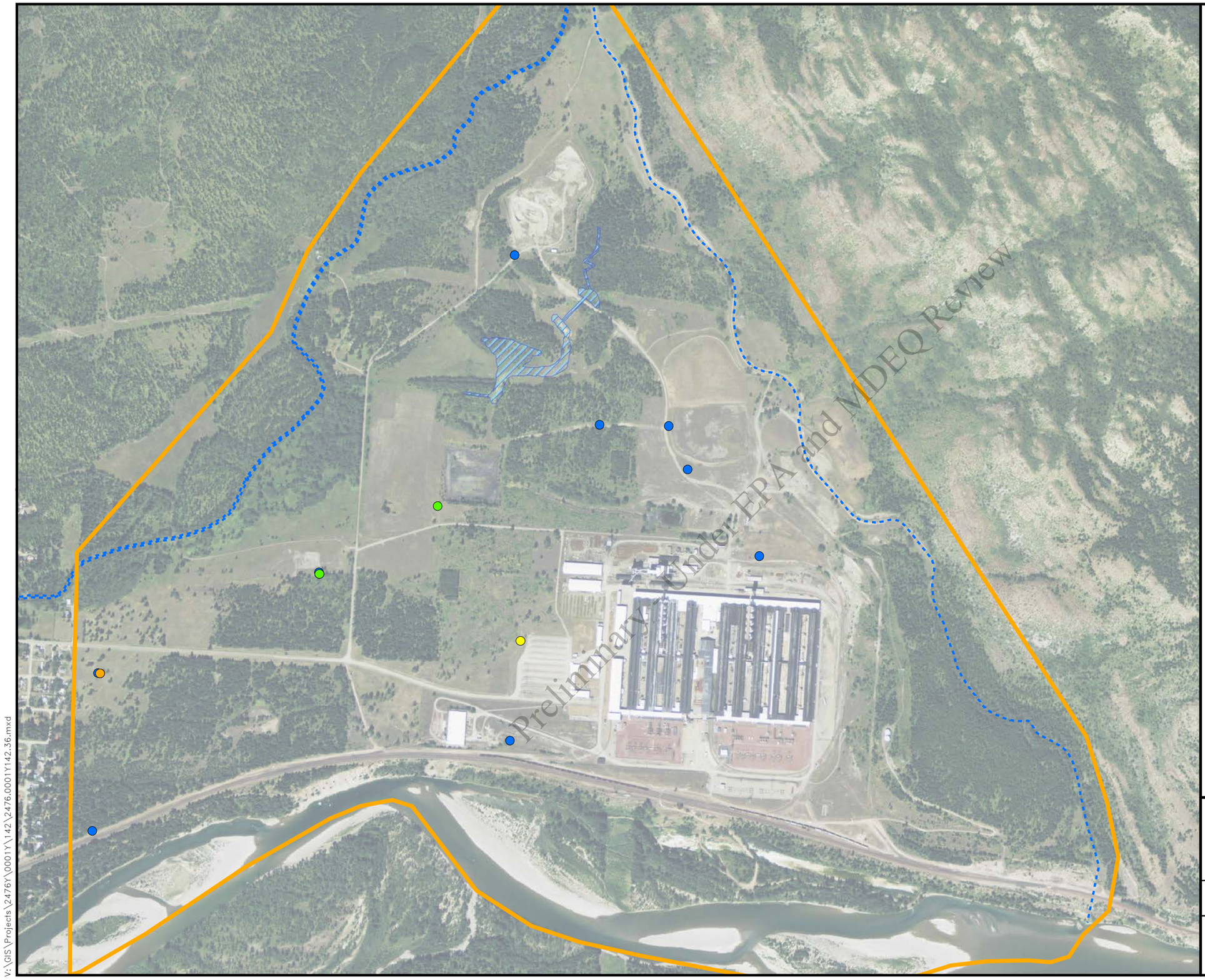
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V22
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.35.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.35.mxd



N

Concentration Legend

- Analyte Not Detected (42.4U)
- ND – 700
- 700 – 1400
- 1400 – 14000
- >14000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Iron	--	--	1400

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
42.4U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:
CONCENTRATIONS OF IRON IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT

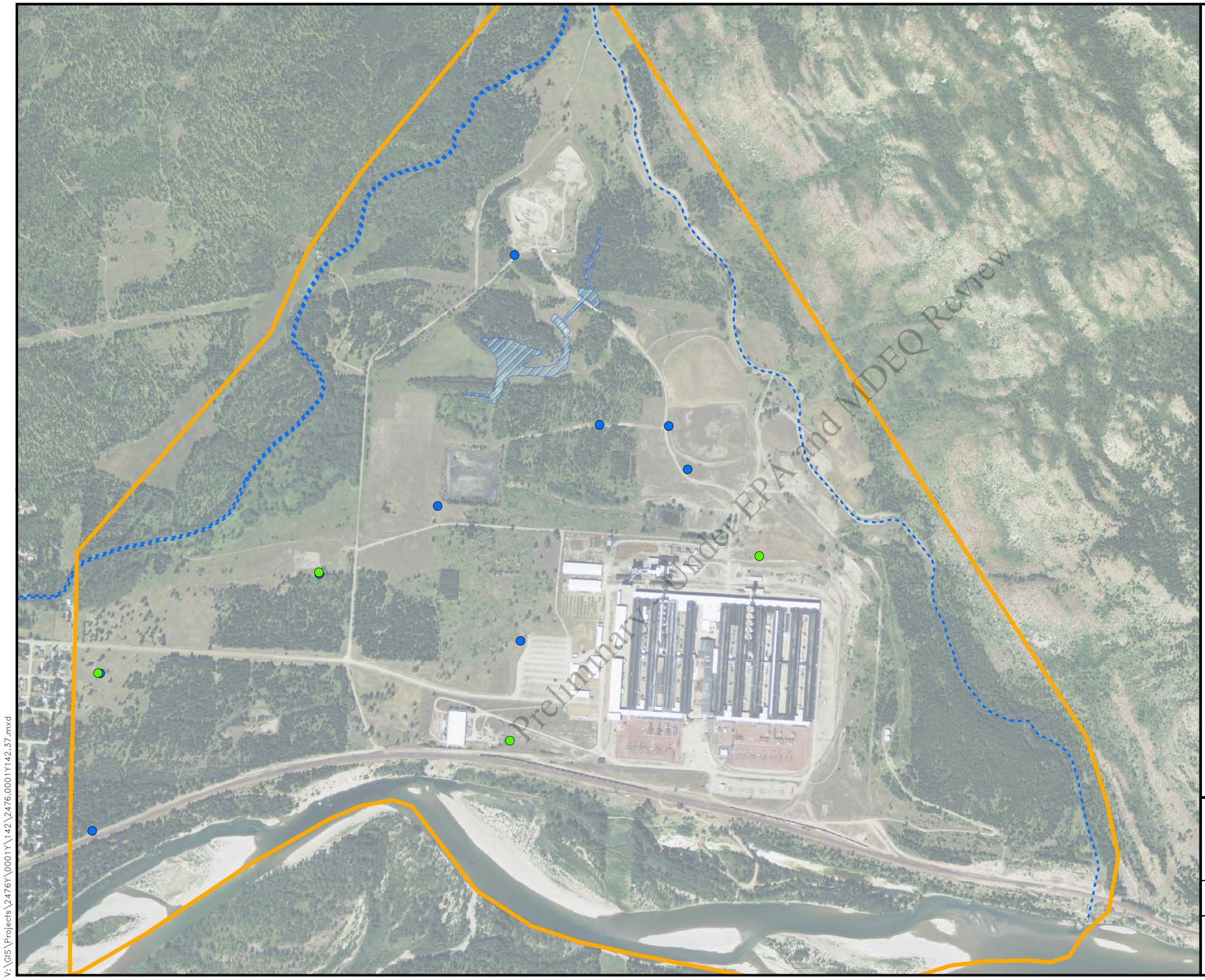
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V23
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.36.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.36.mxd



N

Concentration Legend

- Analyte Not Detected (0.38U)
- ND – 7.5
- 7.5 – 15
- 15 – 150
- >150

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Lead	15	15	15

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
0.38U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF LEAD IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

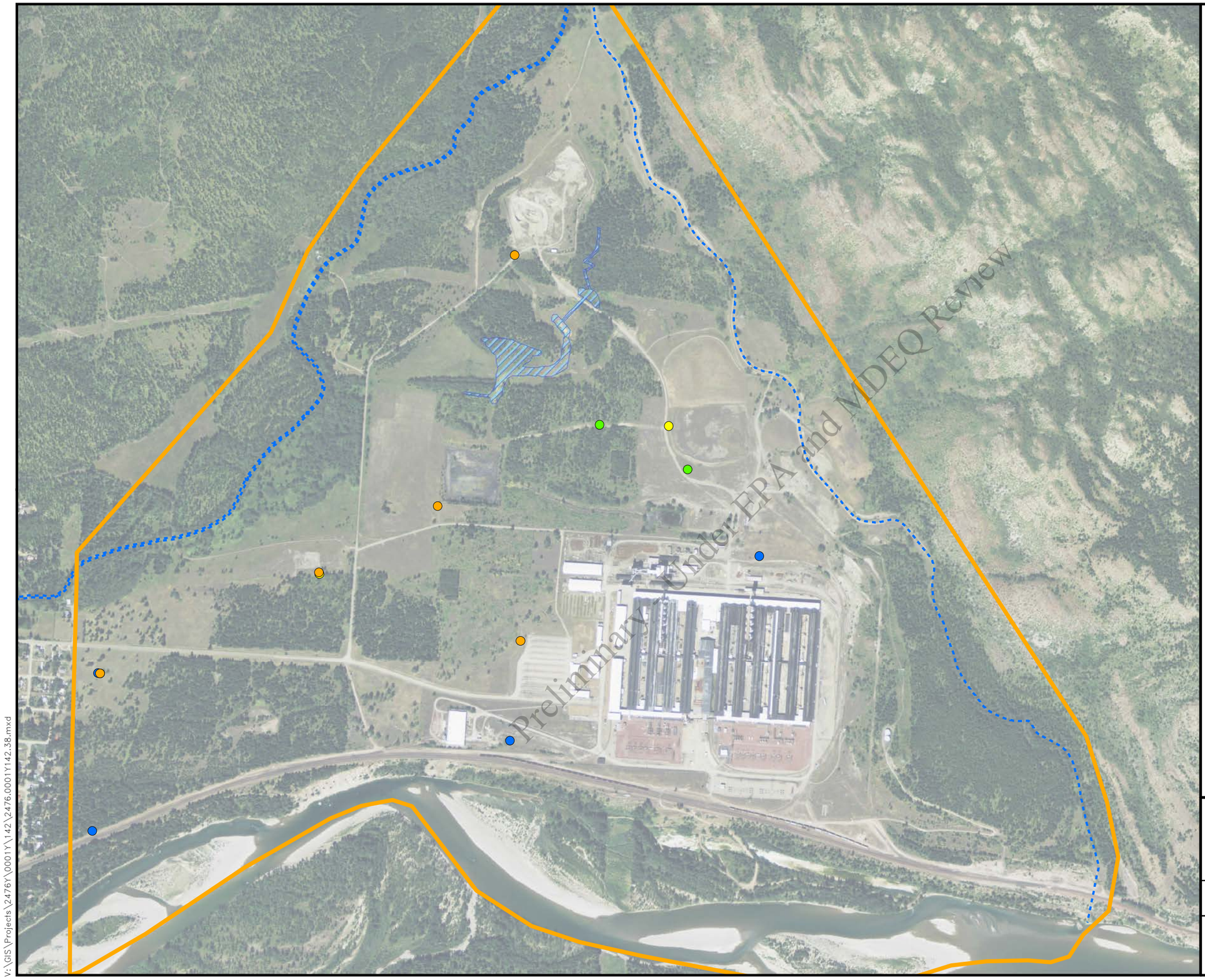
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V24
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.37.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.37.mxd



N

Concentration Legend

- Analyte Not Detected (2.5U)
- ND – 21.5
- 21.5 – 43
- 43 – 430
- >430

Chemical Name	DEQ–7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Manganese	--	--	43

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
2.5U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF MANGANESE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

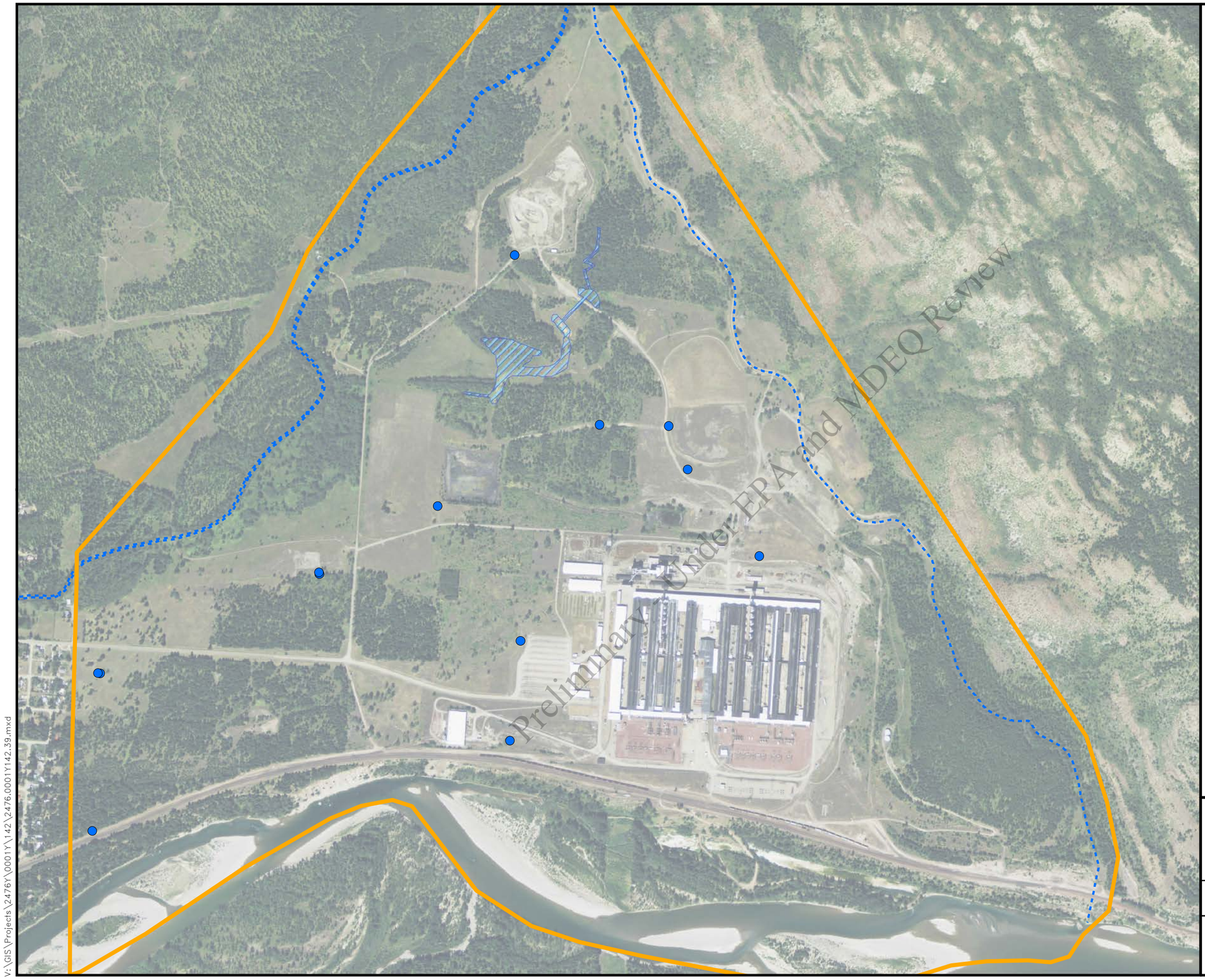
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V25
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.38.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.38.mxd



N

Concentration Legend

- Analyte Not Detected (0.26U)
- ND – 1
- 1 – 2
- 2 – 20
- >20

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Thallium	2	2	0.02

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
0.26U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF THALLIUM IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

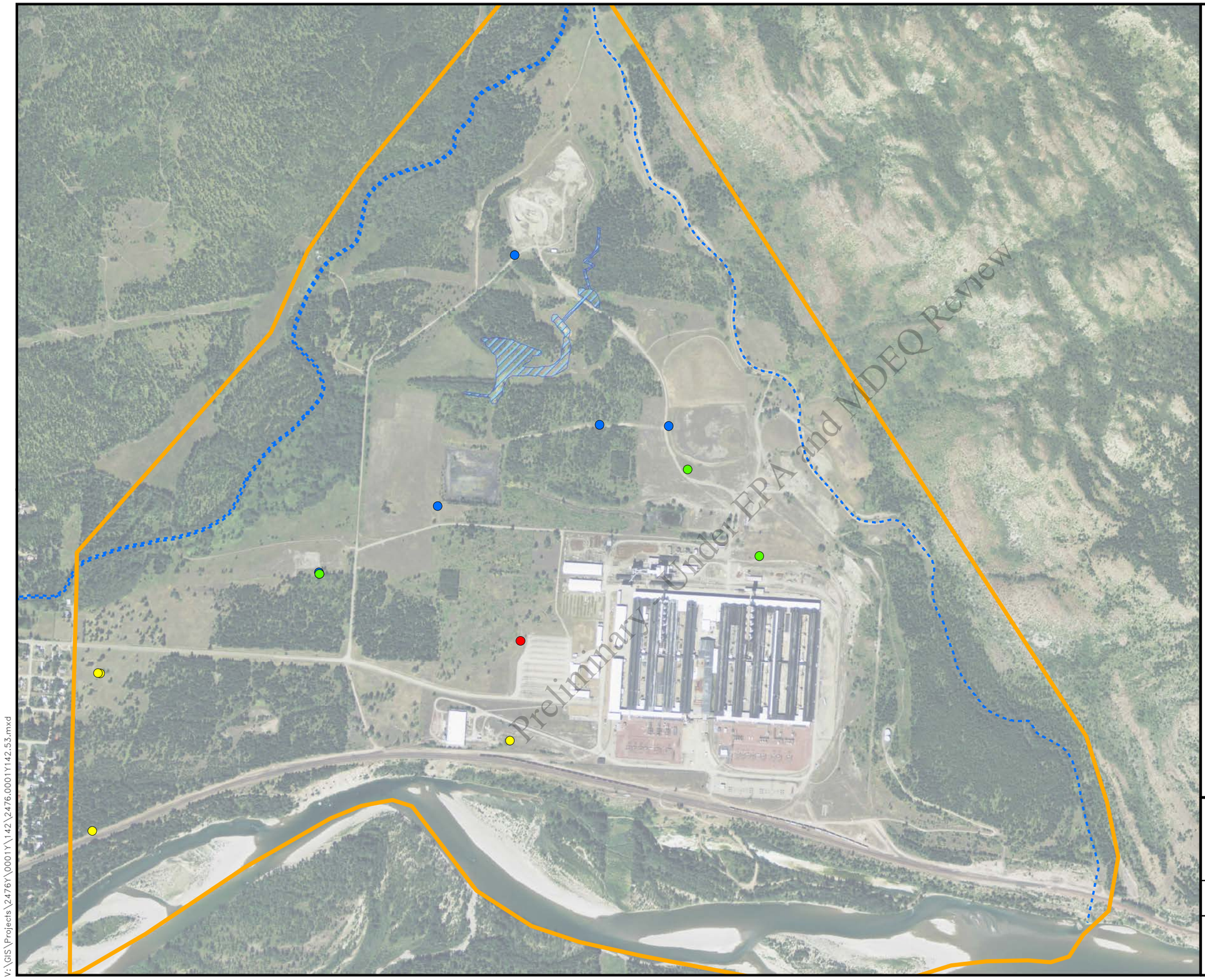
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V26
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.39.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.39.mxd



N

Concentration Legend

- Analyte Not Detected (72U)
- ND – 100
- 100 – 500
- 500 – 5000
- >5000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Ammonia	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
72U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF AMMONIA IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

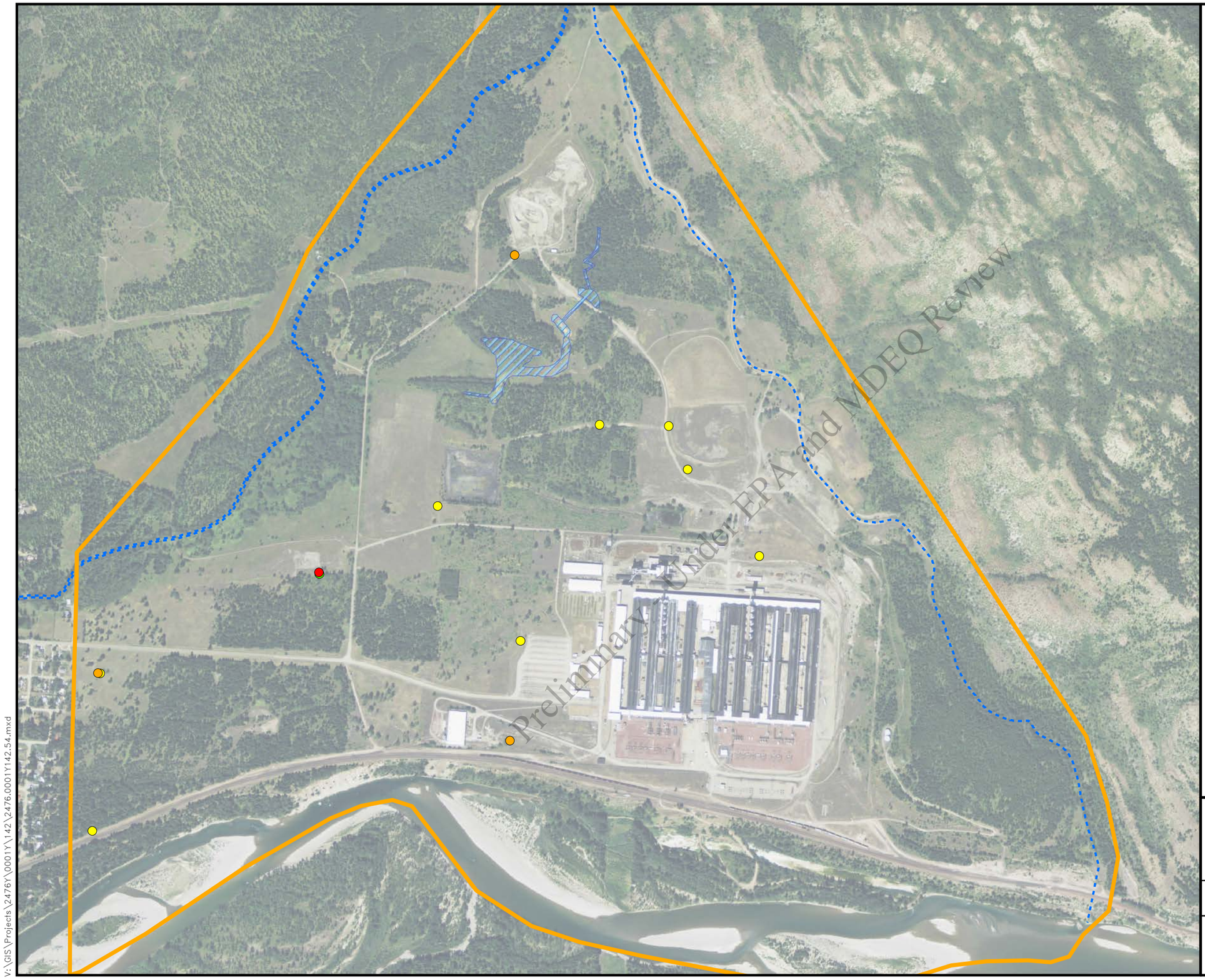
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V27
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.53.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.53.mxd



N

Concentration Legend

- Analyte Not Detected
- ND – 500
- 500 – 5000
- 5000 – 10000
- >10000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Chloride	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title: **CONCENTRATIONS OF CHLORIDE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

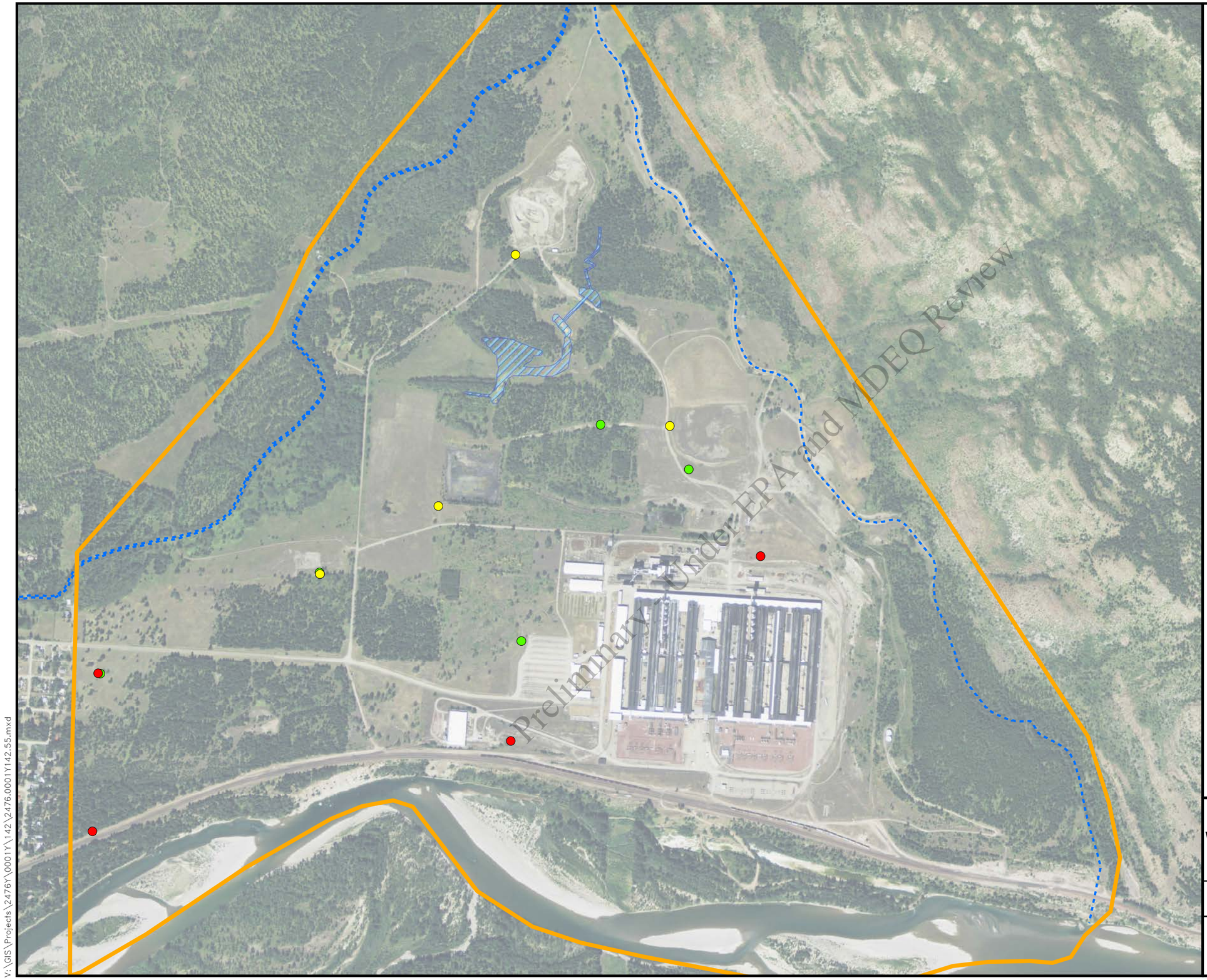
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	**V28**
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.54.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.54.mxd



N

Concentration Legend

- Analyte Not Detected
- ND – 150000
- 15000 – 500000
- 500000 – 1000000
- >1000000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Hardness as Calcium Carbonate	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title: **CONCENTRATIONS OF HARDNESS AS CALCIUM CARBONATE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

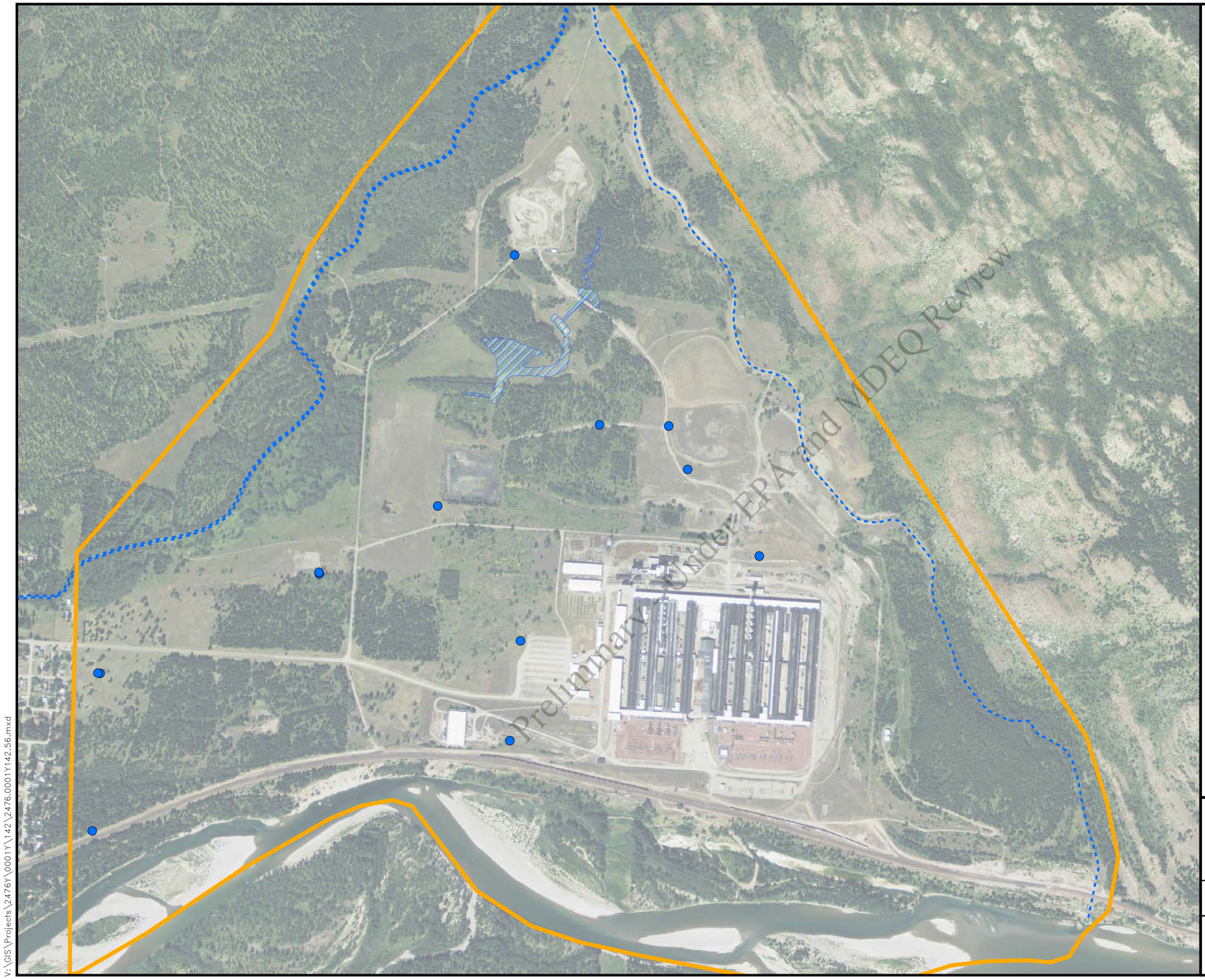
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.55.mxd	

FIGURE **V29**

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N

Concentration Legend

- Analyte Not Detected (100U)
- ND – 5000
- 5000 – 10000
- 10000 – 100000
- >100000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Nitrate	--	10000	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
100U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title: **CONCENTRATIONS OF NITRATE + NITRITE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

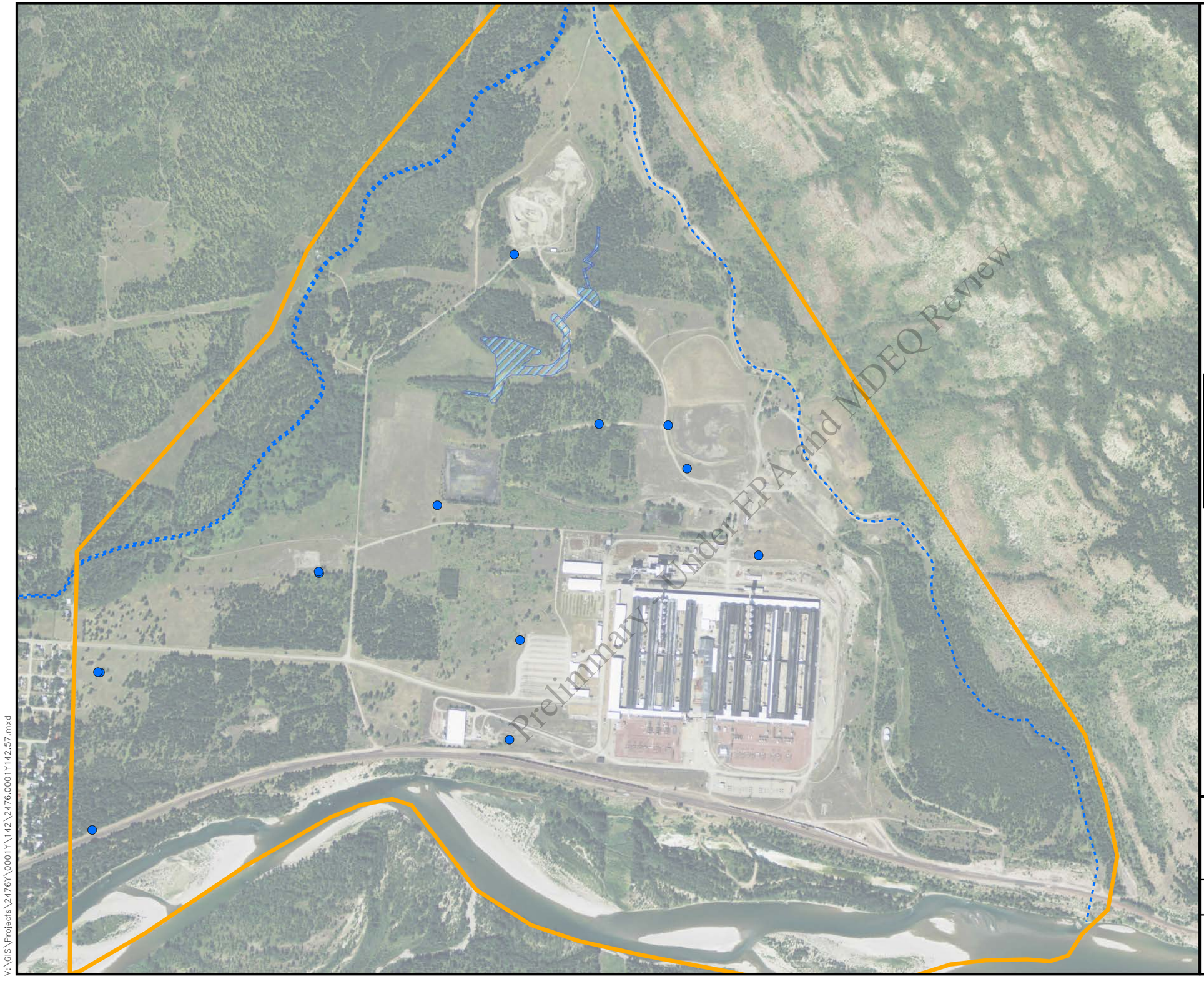
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 23FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V30
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.56.mxd		

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N

Concentration Legend

- Analyte Not Detected (42U)

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Orthophosphate as P	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
42U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900 Feet

Title: **CONCENTRATIONS OF ORTHOPOSPHATE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

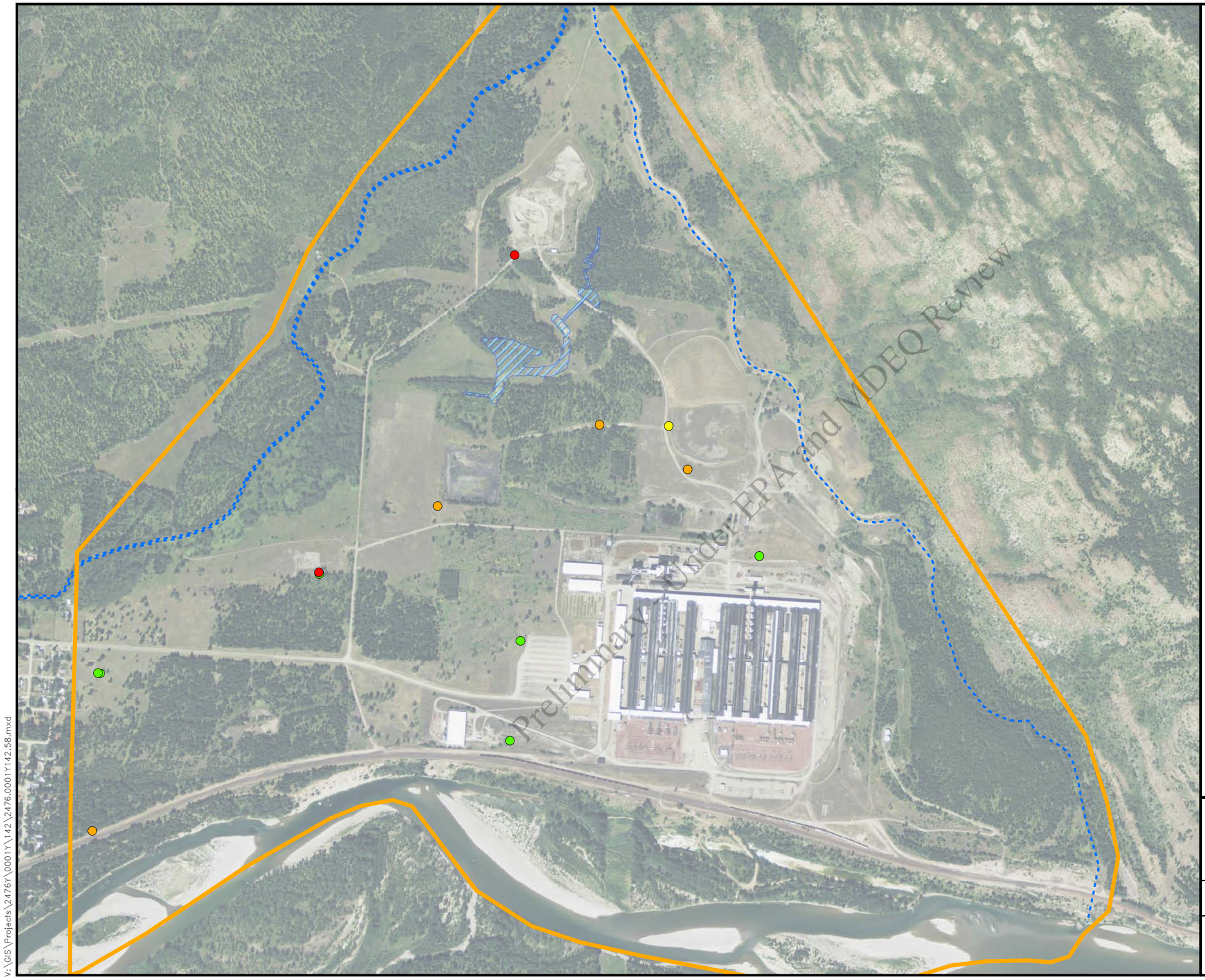
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.57.mxd	

FIGURE **V31**

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N

Concentration Legend

- Analyte Not Detected
- ND – 5000
- 5000 – 10000
- 10000 – 20000
- >20000

Chemical Name	DEQ-7 Human Health Standards	EPA MCL	EPA Risk Based Screening Level Tapwater RSL
Sulfate	--	--	--

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title: **CONCENTRATIONS OF SULFATE IN GROUNDWATER FROM MONITORING WELLS SCREENED BELOW UPPER HYDROGEOLOGIC UNIT**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	V32
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.58.mxd		

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APPENDIX W

Surface Water Laboratory Analytical Data Tables

1. VOCs in Surface Water
2. SVOCs in Surface Water
3. Metals in Surface Water
4. PCBs in Surface Water
5. Pesticides in Surface Water
6. General Chemistry in Surface Water

Preliminary - Under EPA and MDEQ Review

Table W1. Volatile Organic Compounds in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit	CFSWP-018 06 Jun 2016 CFSWP-018-SW N South Percolation Ponds	CFSWP-019 06 Jun 2016 CFSWP-019-SW N South Percolation Ponds	CFSWP-020 06 Jun 2016 CFSWP-020-SW N South Percolation Ponds
Sample Location					CFSWP-018	CFSWP-019	CFSWP-020
Sample Date					06 Jun 2016	06 Jun 2016	06 Jun 2016
Sample Designation					CFSWP-018-SW	CFSWP-019-SW	CFSWP-020-SW
Sample Type					N	N	N
Closest Site Feature					South Percolation Ponds	South Percolation Ponds	South Percolation Ponds
1,1,1-Trichloroethane	200	200	800	ug/l	0.28 U	0.28 U	0.28 U
1,1,2,2-Tetrachloroethane	1.7	--	--	ug/l	0.19 U	0.19 U	0.19 U
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	5500	ug/l	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	3	--	--	ug/l	0.08 U	0.08 U	0.08 U
1,1-Dichloroethane	--	--	2.8	ug/l	0.24 U	0.24 U	0.24 U
1,1-Dichloroethene	7	--	--	ug/l	0.34 U	0.34 U	0.34 U
1,2,3-Trichlorobenzene	--	--	0.7	ug/l	0.35 U	0.35 U	0.35 U
1,2,4-Trichlorobenzene	35	--	0.4	ug/l	0.27 U	0.27 U	0.27 U
1,2-Dibromo-3-Chloropropane	0.2	0.2	0.00034	ug/l	0.23 U	0.23 U	0.23 U
1,2-Dichlorobenzene	420	600	30	ug/l	0.22 U	0.22 U	0.22 U
1,2-Dichloroethane	3.8	5	0.17	ug/l	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	5	5	0.44	ug/l	0.18 U	0.18 U	0.18 U
1,3-Dichlorobenzene	320	--	--	ug/l	0.33 U	0.33 U	0.33 U
1,4-Dichlorobenzene	75	75	0.48	ug/l	0.33 U	0.33 U	0.33 U
2-Butanone (MEK)	--	--	560	ug/l	2.2 U	2.2 U	2.2 U
2-Hexanone	--	--	3.8	ug/l	0.72 U	0.72 U	0.72 U
4-Methyl-2-pentanone (MIBK)	--	--	630	ug/l	0.63 U	0.63 U	0.63 U
Acetone	--	--	1400	ug/l	1.1 U	1.1 U	1.1 U
Benzene	5	5	0.46	ug/l	0.09 U	0.09 U	0.09 U
Bromoform	43	80	3.3	ug/l	0.18 U	0.18 U	0.18 U
Bromomethane	47	--	0.75	ug/l	0.18 UJ	0.18 UJ	0.18 UJ
Carbon disulfide	--	--	81	ug/l	0.22 U	0.22 U	0.22 U
Carbon tetrachloride	2.3	5	0.46	ug/l	0.33 U	0.33 U	0.33 U
Chlorobenzene	100	100	7.8	ug/l	0.24 U	0.24 U	0.24 U
Chlorobromomethane	--	--	8.3	ug/l	0.3 U	0.3 U	0.3 U
Chlorodibromomethane	4	80	0.87	ug/l	0.22 U	0.22 U	0.22 U
Chloroethane	--	--	2100	ug/l	0.37 U	0.37 U	0.37 U
Chloroform	57	80	0.22	ug/l	0.22 U	0.22 U	0.22 U
Chloromethane	30	--	19	ug/l	0.22 U	0.22 U	0.22 U
cis-1,2-Dichloroethene	70	--	--	ug/l	0.26 U	0.26 U	0.26 U
cis-1,3-Dichloropropene	3.4	--	--	ug/l	0.16 U	0.16 U	0.16 U
Cyclohexane	--	--	1300	ug/l	0.26 U	0.26 U	0.26 U
Dichlorobromomethane	5.5	80	0.13	ug/l	0.15 U	0.15 U	0.15 U
Dichlorodifluoromethane	--	--	20	ug/l	0.14 U	0.14 U	0.14 U
Ethylbenzene	530	700	1.5	ug/l	0.3 U	0.3 U	0.3 U
Ethylene Dibromide	--	--	--	ug/l	0.19 U	0.19 U	0.19 U
Isopropylbenzene	--	--	--	ug/l	0.32 U	0.32 U	0.32 U
Methyl acetate	--	--	2000	ug/l	0.58 U	0.58 U	0.58 U
Methyl tert-butyl ether	30	--	14	ug/l	0.13 U	0.13 U	0.13 U
Methylcyclohexane	--	--	--	ug/l	0.22 U	0.22 U	0.22 U
Methylene Chloride	5	5	11	ug/l	0.47 J	0.21 U	0.9 J
m-Xylene & p-Xylene	--	--	--	ug/l	0.28 U	0.28 U	0.28 U
o-Xylene	10000	--	19	ug/l	0.32 U	0.32 U	0.32 U
Styrene	100	100	120	ug/l	0.17 U	0.17 U	0.17 U
Tetrachloroethene	5	--	--	ug/l	0.12 U	0.12 U	0.12 U
Toluene	1000	1000	110	ug/l	0.25 U	0.25 U	0.25 U
trans-1,2-Dichloroethene	100	--	--	ug/l	0.18 U	0.18 U	0.18 U
trans-1,3-Dichloropropene	2	--	--	ug/l	0.19 U	0.19 U	0.19 U
Trichloroethene	5	--	--	ug/l	0.22 U	0.22 U	0.22 U
Trichlorofluoromethane	10000	--	520	ug/l	0.15 U	0.15 U	0.15 U
Vinyl chloride	0.25	2	0.019	ug/l	0.06 U	0.06 U	0.06 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary Under EPA and MDEQ Review

Table W2. Semivolatile Organic Compounds in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-018	CFSWP-019	CFSWP-020
			Sample Date		06 Jun 2016	06 Jun 2016	06 Jun 2016
			Sample Designation		CFSWP-018-SW	CFSWP-019-SW	CFSWP-020-SW
			Sample Type		N	N	N
			Closest Site Feature		South Percolation Ponds	South Percolation Ponds	South Percolation Ponds
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit			
1,1'-Biphenyl	--	--	0.083	ug/l	0.66 U	0.63 U	0.68 U
1,2,4,5-Tetrachlorobenzene	0.97	--	0.17	ug/l	0.45 U	0.43 U	0.47 U
1,4-Dioxane	--	--	0.46	ug/l	3.2 U	3.1 U	3.4 U
2,2'-oxybis[1-chloropropane]	1400	--	--	ug/l	0.97 U	0.93 U	1 U
2,3,4,6-Tetrachlorophenol	--	--	24	ug/l	0.72 U	0.69 U	0.75 U
2,4,5-Trichlorophenol	1800	--	120	ug/l	0.51 U	0.49 U	0.53 U
2,4,6-Trichlorophenol	14	--	1.2	ug/l	0.55 U	0.53 U	0.58 U
2,4-Dichlorophenol	77	--	4.6	ug/l	0.66 U	0.63 U	0.68 U
2,4-Dimethylphenol	380	--	36	ug/l	0.95 U	0.91 U	0.99 U
2,4-Dinitrophenol	69	--	3.9	ug/l	2.5 U	2.4 U	2.6 U
2,4-Dinitrotoluene	1.1	--	0.24	ug/l	1.1 U	1 U	1.1 U
2,6-Dinitrotoluene	0.5	--	0.049	ug/l	0.92 U	0.88 U	0.96 U
2-Chloronaphthalene	1000	--	--	ug/l	0.64 U	0.61 U	0.66 U
2-Chlorophenol	81	--	9.1	ug/l	0.77 U	0.74 U	0.8 U
2-Methylnaphthalene	--	--	3.6	ug/l	0.92 U	0.88 U	0.96 U
2-Methylphenol	--	--	--	ug/l	1.3 U	1.3 U	1.4 U
2-Nitroaniline	--	--	19	ug/l	0.68 U	0.65 U	0.71 U
2-Nitrophenol	--	--	--	ug/l	0.61 U	0.59 U	0.64 U
3 & 4 Methylphenol	--	--	--	ug/l	0.92 U	0.88 U	0.96 U
3,3'-Dichlorobenzidine	0.21	--	0.13	ug/l	1.1 U	1 U	1.1 U
3-Nitroaniline	--	--	--	ug/l	0.85 U	0.82 U	0.89 U
4,6-Dinitro-2-methylphenol	13	--	--	ug/l	2.1 U	2 U	2.2 U
4-Bromophenyl phenyl ether	--	--	--	ug/l	1.1 U	1 U	1.1 U
4-Chloro-3-methylphenol	3000	--	--	ug/l	0.79 U	0.76 U	0.83 U
4-Chloroaniline	--	--	0.37	ug/l	0.76 U	0.73 U	0.79 U
4-Chlorophenyl phenyl ether	--	--	--	ug/l	1 U	0.96 U	1 U
4-Nitroaniline	--	--	3.8	ug/l	0.5 U	0.48 U	0.52 U
4-Nitrophenol	60	--	--	ug/l	4.8 U	4.7 U	5.1 U
Acenaphthene	670	--	53	ug/l	0.92 U	0.88 U	0.96 U
Acenaphthylene	--	--	--	ug/l	0.68 U	0.65 U	0.71 U
Acetophenone	--	--	190	ug/l	1.1 U	1 U	1.1 U
Anthracene	8300	--	180	ug/l	0.59 U	0.57 U	0.62 U
Atrazine	3	3	0.3	ug/l	0.8 U	0.77 U	0.84 U
Benzaldehyde	--	--	19	ug/l	0.9 U	0.86 U	0.93 U
Benzo[a]anthracene	0.038	--	--	ug/l	0.57 U	0.55 U	0.6 U
Benzo[a]pyrene	0.038	0.2	0.0034	ug/l	0.17 U	0.16 U	0.17 U
Benzo[b]fluoranthene	0.038	--	0.034	ug/l	0.46 U	0.44 U	0.48 U
Benzo[g,h,i]perylene	--	--	--	ug/l	0.78 U	0.75 U	0.82 U
Benzo[k]fluoranthene	0.038	--	0.34	ug/l	0.19 U	0.18 U	0.2 U
Bis(2-chloroethoxy)methane	--	--	5.9	ug/l	0.72 U	0.69 U	0.75 U
Bis(2-chloroethyl)ether	0.3	--	0.014	ug/l	0.13 U	0.12 U	0.13 U
Bis(2-ethylhexyl) phthalate	6	6	5.6	ug/l	0.75 U	0.72 U	0.78 U
Butyl benzyl phthalate	1500	--	16	ug/l	0.63 U	0.6 U	0.65 U
Caprolactam	--	--	990	ug/l	1.1 U	1.1 U	1.1 U
Carbazole	--	--	--	ug/l	0.89 U	0.85 U	0.92 U
Chrysene	0.038	--	3.4	ug/l	0.7 U	0.67 U	0.73 U
Dibenz(a,h)anthracene	0.038	--	0.0034	ug/l	0.094 U	0.09 U	0.098 U
Dibenzofuran	--	--	0.79	ug/l	0.89 U	0.85 U	0.92 U
Diethyl phthalate	17000	--	--	ug/l	1 U	1 U	1.1 U
Dimethyl phthalate	270000	--	--	ug/l	1 U	0.98 U	1.1 U
Di-n-butyl phthalate	2000	--	--	ug/l	0.85 U	0.82 U	0.89 U
Di-n-octyl phthalate	--	--	20	ug/l	0.72 U	0.69 U	0.75 U
Fluoranthene	130	--	80	ug/l	0.75 U	0.72 U	0.78 U
Fluorene	1100	--	29	ug/l	0.83 U	0.8 U	0.87 U
Hexachlorobenzene	0.0028	1	0.0098	ug/l	0.49 U	0.47 U	0.51 U
Hexachlorobutadiene	4.4	--	0.14	ug/l	0.79 U	0.76 U	0.83 U
Hexachlorocyclopentadiene	40	50	0.041	ug/l	0.64 U	0.61 U	0.66 U
Hexachloroethane	14	--	0.33	ug/l	0.094 U	0.09 U	0.098 U
Indeno[1,2,3-cd]pyrene	0.038	--	0.034	ug/l	0.22 U	0.21 U	0.23 U
Isophorone	350	--	78	ug/l	0.7 U	0.67 U	0.73 U
Naphthalene	100	--	0.17	ug/l	0.83 U	0.8 U	0.87 U
Nitrobenzene	17	--	0.14	ug/l	0.51 U	0.49 U	0.53 U
N-Nitrosodi-n-propylamine	0.05	--	0.011	ug/l	0.86 U	0.83 U	0.9 U
N-Nitrosodiphenylamine	33	--	12	ug/l	0.77 U	0.74 U	0.8 U
Pentachlorophenol	1	1	0.041	ug/l	2.3 U	2.2 U	2.4 U
Phenanthrene	--	--	--	ug/l	0.68 U	0.65 U	0.71 U
Phenol	300	--	580	ug/l	0.43 U	0.41 U	0.45 U
Pyrene	830	--	12	ug/l	0.86 U	0.83 U	0.9 U

Preliminary - Under EPA and MDEQ Review

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Table W3. Metals in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-001	CFSWP-002	CFSWP-003	CFSWP-004	CFSWP-005	CFSWP-006	CFSWP-007	CFSWP-008	CFSWP-009	CFSWP-010
			Sample Date		16 Sep 2016	16 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	16 Sep 2016	16 Sep 2016	07 Jun 2016	07 Jun 2016
			Sample Designation		CFSWP-001-SW	CFSWP-002-SW	CFSWP-003-SW	CFSWP-004-SW	CFSWP-005-SW	CFSWP-006-SW	CFSWP-007-SW	CFSWP-008-SW	CFSWP-009-SW	CFSWP-010-SW
			Sample Type		N	N	N	N	N	N	N	N	N	N
			Closest Site Feature		Flathead River	Flathead River	Seep Area	Seep Area	Seep Area	Flathead River	Flathead River	Flathead River	Cedar Creek Reservoir Overflow	Cedar Creek Reservoir Overflow
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit										
Aluminum	--	--	2000	ug/l	23.7 J	28.8 J	63.5	522	143	19.9 J	28.9 J	33.9 J	16.8 J	44.6
Antimony	5.6	6	0.78	ug/l	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.76 U	0.76 U
Arsenic	10	10	0.052	ug/l	0.64 U	0.64 U	0.64 U	0.78 J	0.64 U	0.64 U	0.64 U	0.64 U	0.95 J	0.71 U
Barium	1000	2000	380	ug/l	107	102	117	197	192	105	102	103	104	79.6
Beryllium	4	4	2.5	ug/l	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.29 U	0.29 U
Cadmium	5	--	--	ug/l	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.72 U	0.72 U
Calcium	--	--	--	ug/l	24200	23200	27700	60700	60200	24200	23100	23200	50100	47000
Chromium	100	100	--	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.5 U	1.5 U
Cobalt	--	--	0.6	ug/l	1.3 U	1.3 U	1.3 U	1.3 J	1.3 U	1.3 U	1.3 U	1.3 U	1.5 U	1.5 U
Copper	1300	1300	80	ug/l	1.4 U	1.4 U	1.4 U	1.5 J	1.6 J	1.4 U	1.4 U	1.4 U	1.6 U	1.6 U
Cyanide, Total	**140**	200	0.15	ug/l	2 U	2 U	18.8	**209**	**213**	3.2 J	2 U	2 U	4 U	4 U
Iron	--	--	1400	ug/l	42.4 U	42.4 U	135	827	256	42.4 U	42.4 U	42.4 U	49.1 U	49.3 J
Lead	15	15	15	ug/l	0.38 U	0.38 U	0.38 U	0.48 J	0.38 U	0.38 U	0.38 U	0.38 U	0.44 U	0.44 U
Magnesium	--	--	--	ug/l	6320	6030	7650	18200	17800	6630	6010	6050	12600	10900
Manganese	--	--	43	ug/l	2.5 U	2.5 U	10.9	57.1	15.7	2.5 U	2.5 U	2.5 U	3 U	7.8 J
Mercury	0.05	2	0.063	ug/l	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.14 U	0.14 U
Nickel	100	--	--	ug/l	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.6 U	1.6 U
Potassium	--	--	--	ug/l	330	306	398	1120	1020	328	311	317	560	535
Selenium	50	50	10	ug/l	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.79 U	0.79 U
Silver	100	--	9.4	ug/l	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.5 U	1.5 U
Sodium	--	--	--	ug/l	1070	1030	3780	36400	36900	1030	951	958	2340	2080
Thallium	0.24	2	0.02	ug/l	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.31 U	0.31 U
Vanadium	--	--	8.6	ug/l	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	2.2 J	2.1 J
Zinc	2000	--	600	ug/l	7 U	7 U	7 U	7 U	19.9	7 U	7 U	7 U	6.5 U	6.5 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table W3. Metals in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-011	CFSWP-012	CFSWP-013	CFSWP-013	CFSWP-014	CFSWP-015	CFSWP-015	CFSWP-016	CFSWP-017
			Sample Date		07 Jun 2016	07 Jun 2016	07 Jun 2016	07 Jun 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	16 Sep 2016
			Sample Designation		CFSWP-011-SW	CFSWP-012-SW	CFSWP-013-SW	CFSWP-DUP1-SW	CFSWP-014-SW	CFSWP-015-SW	CFSWP-DUP2-SW	CFSWP-016-SW	CFSWP-017-SW
			Sample Type		N	N	N	FD	N	N	FD	N	N
			Closest Site Feature		Cedar Creek Reservoir Overflow	Cedar Creek Reservoir Overflow	Cedar Creek Reservoir Overflow - Upstream	Cedar Creek Reservoir Overflow - Upstream	Cedar Creek Upstream	Cedar Creek	Cedar Creek	Cedar Creek	Flathead River Upstream
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Aluminum	--	--	2000	ug/l	28.2 J	35.9 J	30 J	34.6 J	37.6 J	44.9	39.7 J	59.2	33.2 J
Antimony	5.6	6	0.78	ug/l	0.76 U	0.76 U	0.76 U	0.76 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
Arsenic	10	10	0.052	ug/l	0.71 U	0.8 J	0.71 U	0.71 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U
Barium	1000	2000	380	ug/l	78.6	79	78	81.2	98.1	103	101	99.5	190
Beryllium	4	4	2.5	ug/l	0.29 U	0.29 U	0.29 U	0.29 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Cadmium	5	--	--	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Calcium	--	--	--	ug/l	47000	46800	46500	47700	43100	47500	44600	44400	33800
Chromium	100	100	--	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Cobalt	--	--	0.6	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Copper	1300	1300	80	ug/l	2.1 J	4.1	2.2 J	11.7 J	5.4	1.4 U	1.4 U	1.4 U	1.4 U
Cyanide, Total	**140**	200	0.15	ug/l	4 U	4 U	4 U	4 U	2 U	2.3 J	2 U	2 U	2 U
Iron	--	--	1400	ug/l	49.1 U	72.8 J	49.1 U	49.1 U	42.4 U	42.4 U	42.4 U	42.4 U	63.1 J
Lead	15	15	15	ug/l	0.44 U	0.44 U	0.44 U	0.44 U	0.41 J	0.38 U	0.38 U	0.38 U	0.38 U
Magnesium	--	--	--	ug/l	10800	10900	10700	11100	13500	13600	13400	13500	9260
Manganese	--	--	43	ug/l	6.3 J	8.6	10.7	11	13.2	8.6 J	5.9 J	3.5 J	21.8
Mercury	0.05	2	0.063	ug/l	0.14 U	0.14 U	0.14 U	0.14 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Nickel	100	--	--	ug/l	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Potassium	--	--	--	ug/l	540	537	530	556	377	405	357	367	439
Selenium	50	50	10	ug/l	0.79 U	0.79 U	0.79 U	0.79 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Silver	100	--	9.4	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Sodium	--	--	--	ug/l	2120	2080	2030	2120	3240	2870	2620	3260	1580
Thallium	0.24	2	0.02	ug/l	0.31 U	0.31 U	0.31 U	0.31 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Vanadium	--	--	8.6	ug/l	2.1 J	2.1 J	1.9 J	1.8 J	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Zinc	2000	--	600	ug/l	6.5 U	6.5 U	6.5 U	6.5 U	16.4	7 U	7 U	7 U	7 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table W3. Metals in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-018	CFSWP-019	CFSWP-020	CFSWP-021	CFSWP-022
			Sample Date		06 Jun 2016	06 Jun 2016	06 Jun 2016	06 Jun 2016	06 Jun 2016
			Sample Designation		CFSWP-018-SW	CFSWP-019-SW	CFSWP-020-SW	CFSWP-021-SW	CFSWP-022-SW
			Sample Type		N	N	N	N	N
			Closest Site Feature		South Percolation Ponds	South Percolation Ponds	South Percolation Ponds	Northern SW Area	Northern SW Area
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit					
Aluminum	--	--	2000	ug/l	13.5 U	18.7 J	15.3 J	95.3	937
Antimony	5.6	6	0.78	ug/l	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U
Arsenic	10	10	0.052	ug/l	0.71 J	0.71 U	0.71 U	1.2 J	0.88 J
Barium	1000	2000	380	ug/l	268	265	305	98	125
Beryllium	4	4	2.5	ug/l	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Cadmium	5	--	--	ug/l	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U
Calcium	--	--	--	ug/l	48300	49100	45500	50500	43600
Chromium	100	100	--	ug/l	3.9 J	1.8 J	1.5 U	1.5 U	1.5 U
Cobalt	--	--	0.6	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Copper	1300	1300	80	ug/l	2 J	3.3 J	1.8 J	1.6 U	2.6 J
Cyanide, Total	**140**	200	0.15	ug/l	4 U	4 U	12.5	4 U	4 U
Iron	--	--	1400	ug/l	109 J	110 J	49.1 U	79.5 J	302
Lead	15	15	15	ug/l	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
Magnesium	--	--	--	ug/l	16200	16200	15600	11700	10900
Manganese	--	--	43	ug/l	5.7 J	4.4 J	3 U	4.1 J	17.8
Mercury	0.05	2	0.063	ug/l	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Nickel	100	--	--	ug/l	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Potassium	--	--	--	ug/l	797	910	818	578	785
Selenium	50	50	10	ug/l	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U
Silver	100	--	9.4	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Sodium	--	--	--	ug/l	5660	5840	5150	6150	6900
Thallium	0.24	2	0.02	ug/l	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Vanadium	--	--	8.6	ug/l	2.1 J	2.1 J	2.1 J	2.1 J	2.2 J
Zinc	2000	--	600	ug/l	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table W4. Polychlorinated Biphenyls in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location	CFSWP-018	CFSWP-019	CFSWP-020
					Sample Date	06 Jun 2016	06 Jun 2016	06 Jun 2016
					Sample Designation	CFSWP-018-SW	CFSWP-019-SW	CFSWP-020-SW
					Sample Type	N	N	N
					Closest Site Feature	South Percolation Ponds	South Percolation Ponds	South Percolation Ponds
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit				
Aroclor 1016	0.00064	--	0.14	ug/l	0.098 U	0.098 U	0.098 U	
Aroclor 1221	0.00064	--	0.0047	ug/l	0.098 U	0.098 U	0.098 U	
Aroclor 1232	0.00064	--	0.0047	ug/l	0.098 U	0.098 U	0.098 U	
Aroclor 1242	0.00064	--	0.0078	ug/l	0.098 U	0.098 U	0.098 U	
Aroclor 1248	0.00064	--	0.0078	ug/l	0.098 U	0.098 U	0.098 U	
Aroclor 1254	0.00064	--	0.0078	ug/l	0.084 U	0.084 U	0.084 U	
Aroclor 1260	0.00064	--	0.0078	ug/l	0.084 U	0.084 U	0.084 U	
Aroclor 1268	0.00064	--	--	ug/l	0.084 U	0.084 U	0.084 U	
Aroclor-1262	--	--	--	ug/l	0.084 U	0.084 U	0.084 U	
Polychlorinated biphenyls, Total	0.00064	--	--	ug/l	0.098 U	0.098 U	0.098 U	

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards

Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL

Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table W5. Organochlorine Pesticides in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-018	CFSWP-019	CFSWP-020
			Sample Date		06 Jun 2016	06 Jun 2016	06 Jun 2016
			Sample Designation		CFSWP-018-SW	CFSWP-019-SW	CFSWP-020-SW
			Sample Type		N	N	N
			Closest Site Feature		South Percolation Ponds	South Percolation Ponds	South Percolation Ponds
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit			
4,4'-DDD	0.0031	--	0.032	ug/l	0.005 U	0.005 U	0.005 U
4,4'-DDE	0.0022	--	0.046	ug/l	0.004 U	0.004 U	0.004 U
4,4'-DDT	0.0022	--	0.23	ug/l	0.004 U	0.004 U	0.004 U
Aldrin	0.00049	--	0.00092	ug/l	0.004 U	0.004 U	0.004 U
alpha-BHC	0.026	--	0.0072	ug/l	0.006 U	0.006 U	0.006 U
alpha-Chlordane	0.008	--	--	ug/l	0.004 U	0.004 U	0.004 U
beta-BHC	0.091	--	0.025	ug/l	0.005 U	0.005 U	0.005 U
delta-BHC	--	--	--	ug/l	0.006 U	0.006 U	0.006 U
Dieldrin	0.00052	--	0.0018	ug/l	0.004 U	0.004 U	0.004 U
Endosulfan I	62	--	--	ug/l	0.005 U	0.005 U	0.005 U
Endosulfan II	62	--	--	ug/l	0.004 U	0.004 U	0.004 U
Endosulfan sulfate	62	--	--	ug/l	0.005 U	0.005 U	0.005 U
Endrin	0.059	2	0.23	ug/l	0.004 U	0.004 U	0.004 U
Endrin aldehyde	0.29	--	--	ug/l	0.004 U	0.004 U	0.004 U
Endrin ketone	--	--	--	ug/l	0.004 U	0.004 U	0.004 U
gamma-BHC (Lindane)	0.2	0.2	0.042	ug/l	0.004 U	0.004 U	0.004 U
gamma-Chlordane	--	--	--	ug/l	0.005 U	0.005 U	0.005 U
Heptachlor	0.00079	0.4	0.0014	ug/l	0.004 U	0.004 U	0.004 U
Heptachlor epoxide	0.00039	0.2	0.0014	ug/l	0.004 U	0.004 U	0.004 U
Methoxychlor	40	40	3.7	ug/l	0.004 U	0.004 U	0.004 U
Toxaphene	0.0028	3	0.071	ug/l	0.06 U	0.06 U	0.06 U

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MT DEQ Review

Table W6. General Chemistry in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-001	CFSWP-002	CFSWP-003	CFSWP-004	CFSWP-005	CFSWP-006	CFSWP-007	CFSWP-008	CFSWP-009
			Sample Date		16 Sep 2016	16 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	16 Sep 2016	16 Sep 2016	07 Jun 2016
			Sample Designation		CFSWP-001-SW	CFSWP-002-SW	CFSWP-003-SW	CFSWP-004-SW	CFSWP-005-SW	CFSWP-006-SW	CFSWP-007-SW	CFSWP-008-SW	CFSWP-009-SW
			Sample Type		N	N	N	N	N	N	N	N	N
			Surface Water Feature		Flathead River	Flathead River	Seep Area / Flathead River	Seep Area / Flathead River	Seep Area / Flathead River	Flathead River	Flathead River	Flathead River	Cedar Creek Reservoir Overflow
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--		--	ug/l	72 U	72 U	72 UJ	72 UJ	72 UJ	72 UJ	72 U	72 U	48.9 J
Chloride	--	--	--	ug/l	379 J	342 J	500	3060	2910	352	348 J	335 J	1770 J+
Fluoride	4000	4000	80	ug/l	35.8 J-	35.9 J-	181	2560	2570	37.3 J	33.8 J-	33.5 J-	80.3
Hardness as calcium carbonate	--	--	--	ug/l	88000	86000	90000	222000	218000	90000	86000	84000	170000
Nitrate Nitrite as N	10000	10000	--	ug/l	898	100 U	122	1510	1680	100 U	100 U	100 U	100 U
Orthophosphate as P	--	--	--	ug/l	21 R	21 R	42 U	42 U	42 U	42 U	21 R	21 R	NA
Sulfate	--	--	--	ug/l	3570 J-	3610 J-	4620	18100	17800	3680	3530 J-	3490 J-	2790

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table W6. General Chemistry in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location		CFSWP-010	CFSWP-011	CFSWP-012	CFSWP-013	CFSWP-013	CFSWP-014	CFSWP-015	CFSWP-015	CFSWP-016
			Sample Date		07 Jun 2016	07 Jun 2016	07 Jun 2016	07 Jun 2016	07 Jun 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016
			Sample Designation		CFSWP-010-SW	CFSWP-011-SW	CFSWP-012-SW	CFSWP-013-SW	CFSWP-DUP1-SW	CFSWP-014-SW	CFSWP-015-SW	CFSWP-DUP2-SW	CFSWP-016-SW
			Sample Type		N	N	N	N	FD	N	N	FD	N
			Surface Water Feature		Cedar Creek Reservoir Overflow	Cedar Creek Reservoir Overflow	Cedar Creek Reservoir Overflow	Cedar Creek Reservoir Overflow - Upstream	Cedar Creek Upstream	Cedar Creek	Cedar Creek	Cedar Creek	Cedar Creek
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit									
Ammonia	--		--	ug/l	23 U	23 U	23 U	23 U	27.9 J	72 U	72 U	72 U	72 U
Chloride	--	--	--	ug/l	1970 J+	1710 J+	1720 J+	1780 J+	1700 J+	2670	2600	2610	2800
Fluoride	4000	4000	80	ug/l	39.4 J	38.7 J	39.5 J	39.2 J	38.3 J	55.8 J	62.4 J	62.3 J	58.8 J
Hardness as calcium carbonate	--	--	--	ug/l	164000	156000	152000	156000	156000	164000	178000	170000	172000
Nitrate Nitrite as N	10000	10000	--	ug/l	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Orthophosphate as P	--	--	--	ug/l	NA	NA	NA	NA	NA	42 UJ	42 UJ	42 UJ	42 UJ
Sulfate	--	--	--	ug/l	1930	1910	1900	1910	1960	3320	2740	3100	2700

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

Preliminary - Under EPA and MDEQ Review

Table W6. General Chemistry in Surface Water
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location	CFSWP-017	CFSWP-018	CFSWP-019	CFSWP-020	CFSWP-021	CFSWP-022
				Sample Date	16 Sep 2016	06 Jun 2016	06 Jun 2016	06 Jun 2016	06 Jun 2016	06 Jun 2016
				Sample Designation	CFSWP-017-SW	CFSWP-018-SW	CFSWP-019-SW	CFSWP-020-SW	CFSWP-021-SW	CFSWP-022-SW
				Sample Type	N	N	N	N	N	N
				Surface Water Feature	Flathead River Upstream	South Percolation Ponds	South Percolation Ponds	South Percolation Ponds	Northern SW Area	Northern SW Area
Parameter	DEQ-7 Human Health Standards	EPA Risk Based Screening Level Drinking water MCL	EPA Risk Based Screening Level Tapwater RSL	Unit						
Ammonia	--		--	ug/l	72 U	178	53 J	23 U	28.4 J	23 U
Chloride	--	--	--	ug/l	864 J	2160 J+	1930 J+	2240 J+	1590 J+	1640 J+
Fluoride	4000	4000	80	ug/l	56.2 J-	353	379	250	166	177
Hardness as calcium carbonate	--	--	--	ug/l	124000	180000	180000	176000	168000	172000
Nitrate Nitrite as N	10000	10000	--	ug/l	100 U	100 U	100 U	117	100 U	100 U
Orthophosphate as P	--	--	--	ug/l	21 R	NA	NA	NA	NA	NA
Sulfate	--	--	--	ug/l	4300 J-	3390	3270	3590	7440	6540

Bold indicates exceedance of Department of Environmental Quality-7 Human Health Standards
Shaded indicates exceedance of Environmental Protection Agency Risk Based Screening Level Drinking water MCL
Red indicates exceedance of Environmental Protection Agency Risk Based Screening Level Tapwater RSL

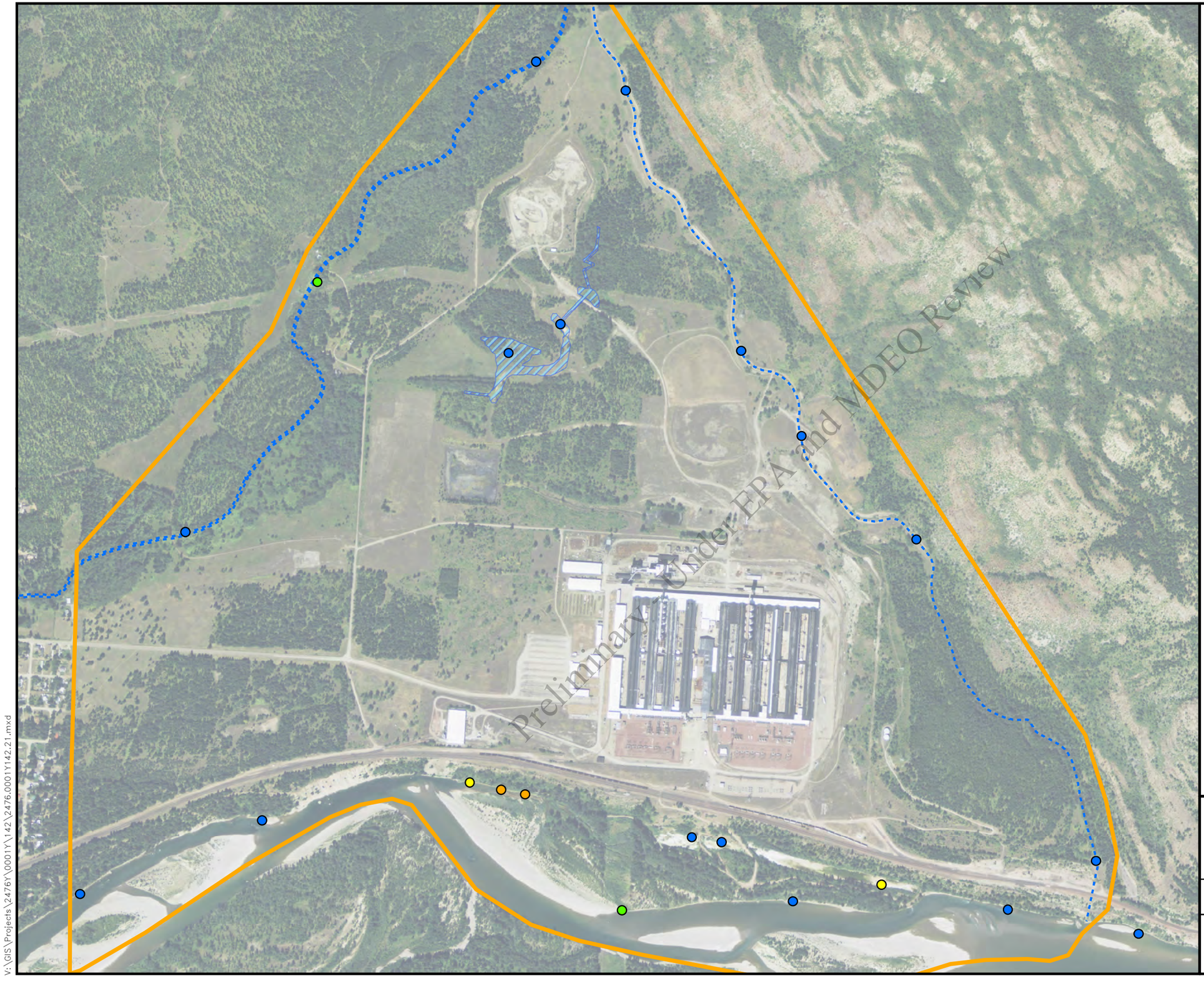
Preliminary - Under EPA and MDEQ Review

APPENDIX X

Preliminary Under EPA and MDEQ Review

Surface Water Thematic Maps

1. Concentrations of Cyanide in Surface Water
2. Concentrations of Fluoride in Surface Water
3. Concentrations of Aluminum in Surface Water
4. Concentrations of Arsenic in Surface Water
5. Concentrations of Cobalt in Surface Water
6. Concentrations of Copper in Surface Water
7. Concentrations of Iron in Surface Water
8. Concentrations of Lead in Surface Water
9. Concentrations of Thallium in Surface Water
10. Concentrations of Manganese in Surface Water



N

Concentration Legend

- Analyte Not Detected (4U)
- ND – 5.2
- 5.2 – 140
- 140 – 2000
- >2000

Chemical Name	Cyanide
DEQ–7 Aquatic Life Standards Acute	22
DEQ–7 Aquatic Life Standards Chronic	5.2
DEQ–7 Human Health Standards	140
EPA MCL	200
EPA Risk Based Screening Level Tapwater RSL	0.15

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
4U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:

CONCENTRATIONS OF CYANIDE IN SURFACE WATER

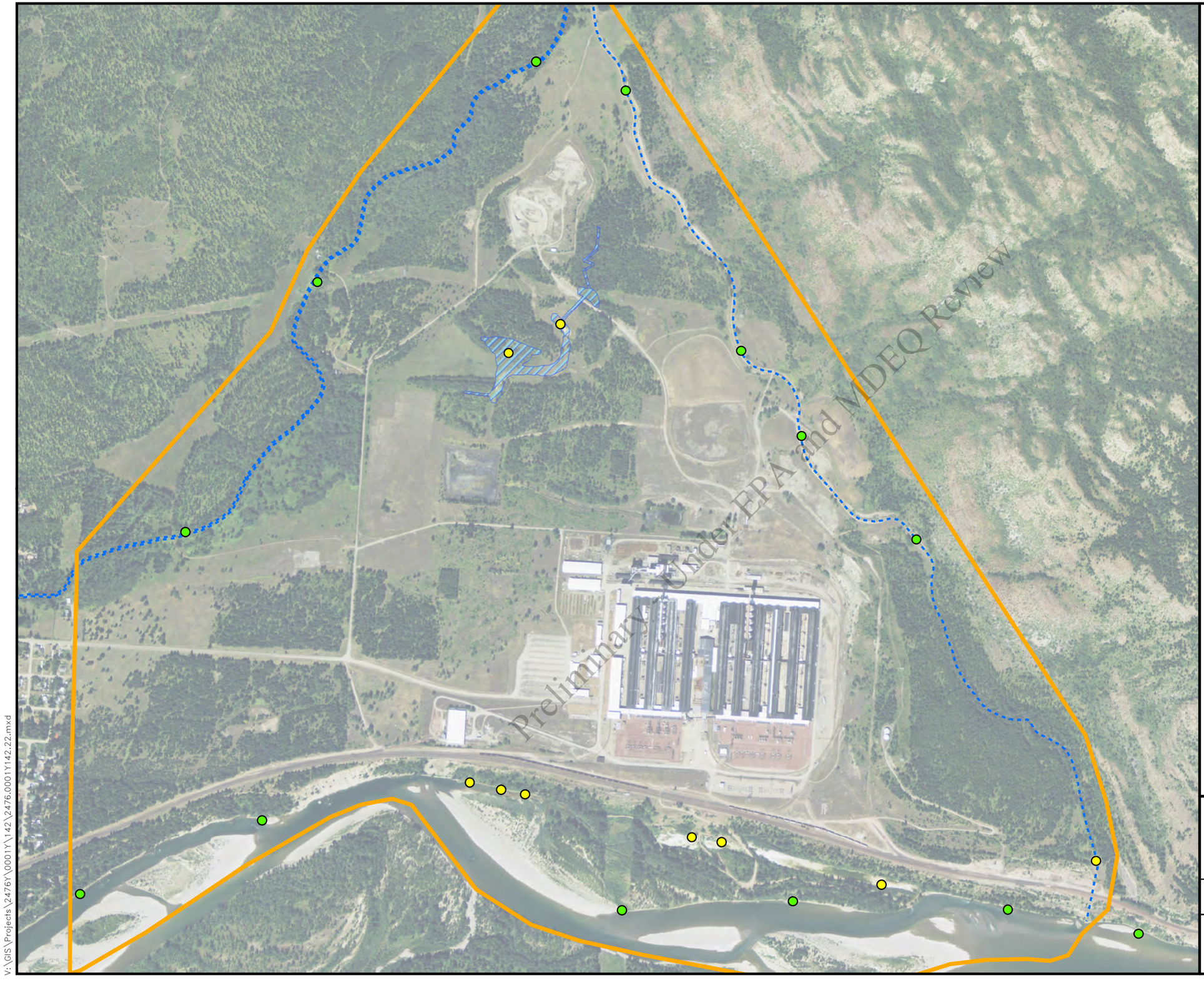
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X1
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.21.mxd		

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N

Concentration Legend

- Analyte Not Detected
- ND – 80
- 80 – 4000
- 4000 – 40000
- >40000

Chemical Name	Fluoride
DEQ–7 Aquatic Life Standards Acute	--
DEQ–7 Aquatic Life Standards Chronic	--
DEQ–7 Human Health Standards	4000
EPA MCL	4000
EPA Risk Based Screening Level Tapwater RSL	80

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
All Samples are in micrograms per litres (ug/L)

450 0 450 900
Feet

Title:

CONCENTRATIONS OF FLUORIDE IN SURFACE WATER

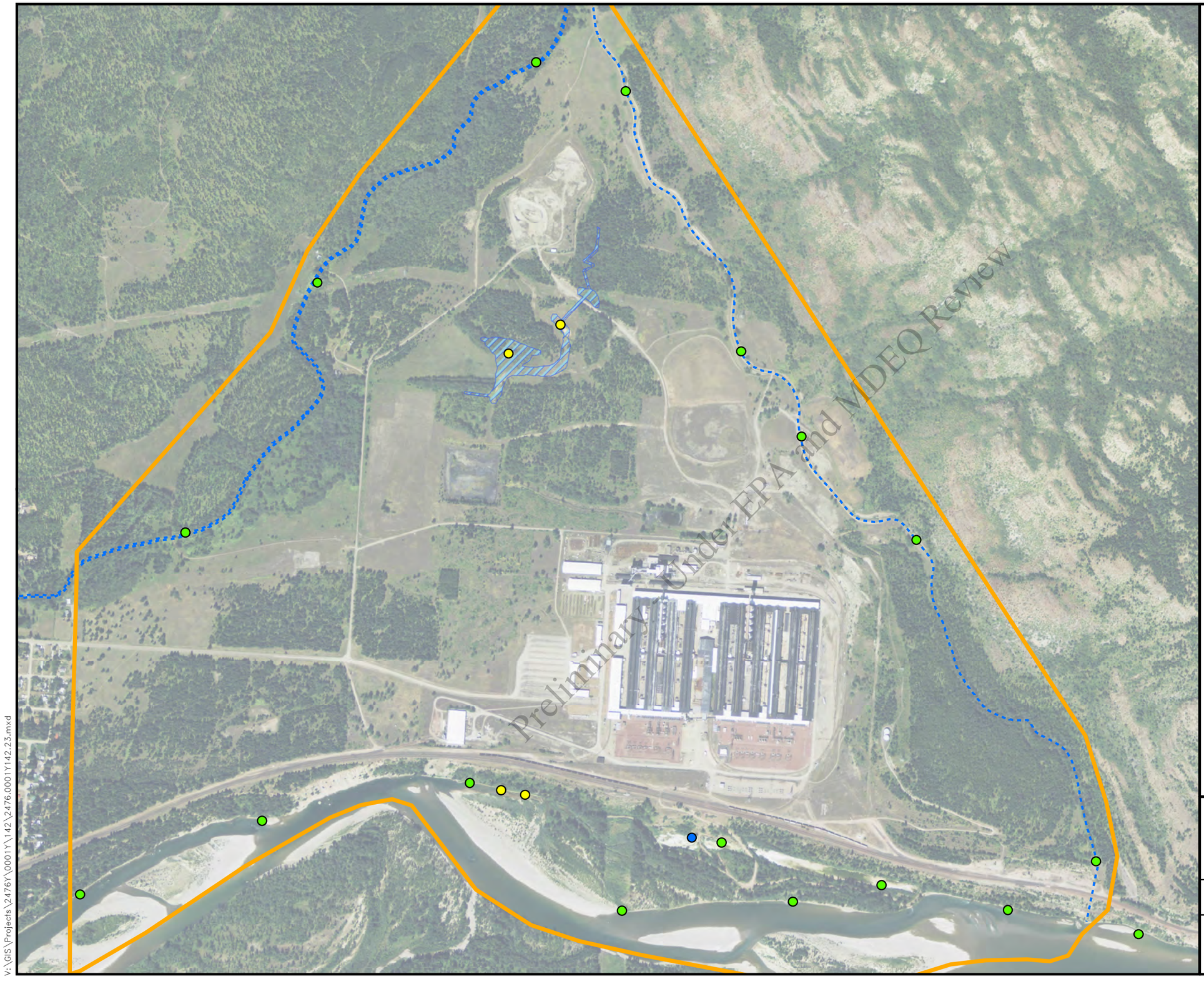
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X2
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.22.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.22.mxd



N

Concentration Legend

- Analyte Not Detected (13.5U)
- ND – 87
- 87 – 2000
- 2000 – 20000
- >20000

Chemical Name	Aluminum
DEQ–7 Aquatic Life Standards Acute	750
DEQ–7 Aquatic Life Standards Chronic	87
DEQ–7 Human Health Standards	--
EPA MCL	--
EPA Risk Based Screening Level Tapwater RSL	2000

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
13.5U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900 Feet

Title:

CONCENTRATIONS OF ALUMINUM IN SURFACE WATER

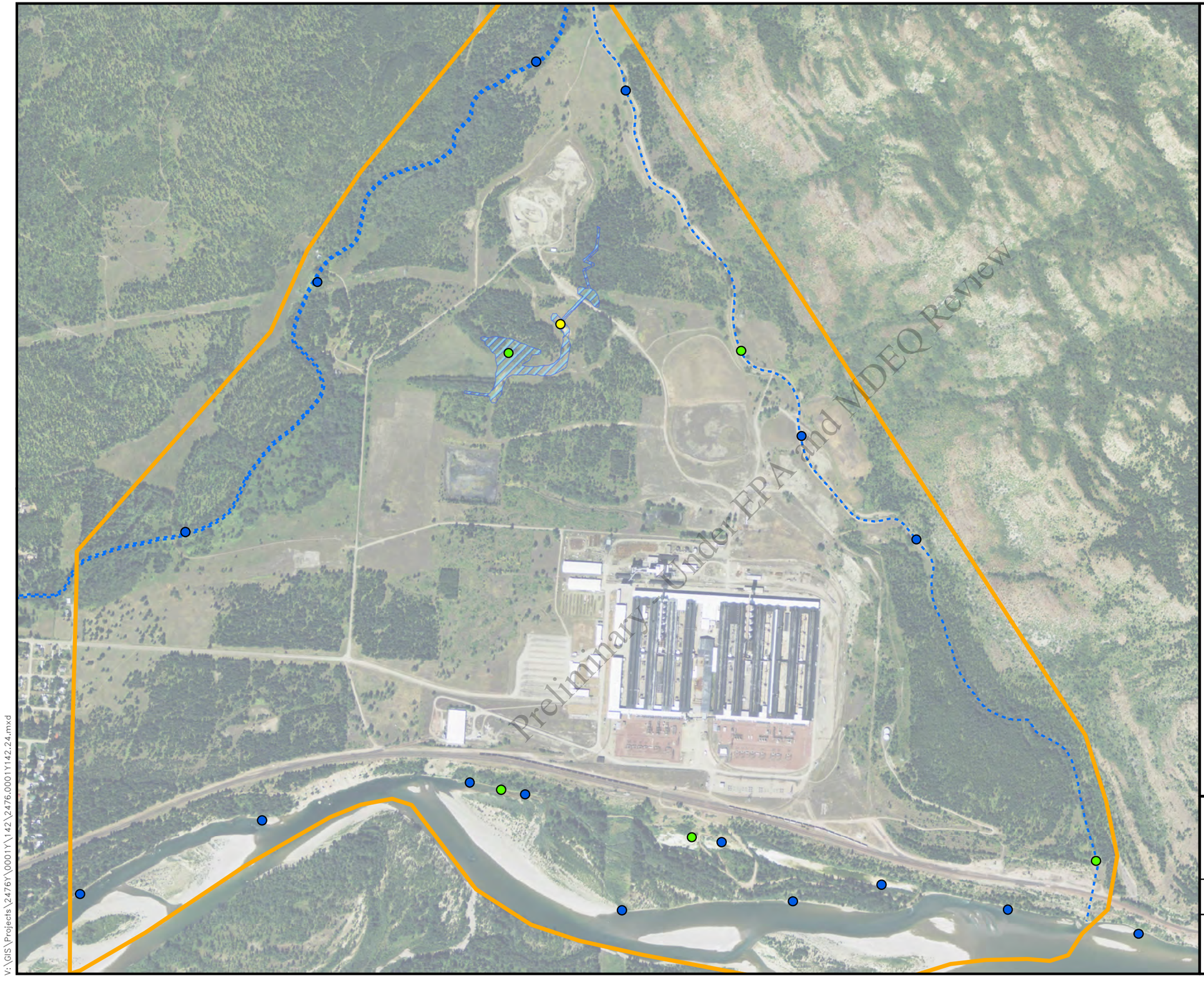
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X3
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.23.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.23.mxd



N

Concentration Legend

- Analyte Not Detected (.71U)
- ND – 1
- 1 – 10
- 10 – 100
- >100

Chemical Name	Arsenic
DEQ–7 Aquatic Life Standards Acute	340
DEQ–7 Aquatic Life Standards Chronic	150
DEQ–7 Human Health Standards	10
EPA MCL	10
EPA Risk Based Screening Level Tapwater RSL	0.052

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
.71U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:

CONCENTRATIONS OF ARSENIC IN SURFACE WATER

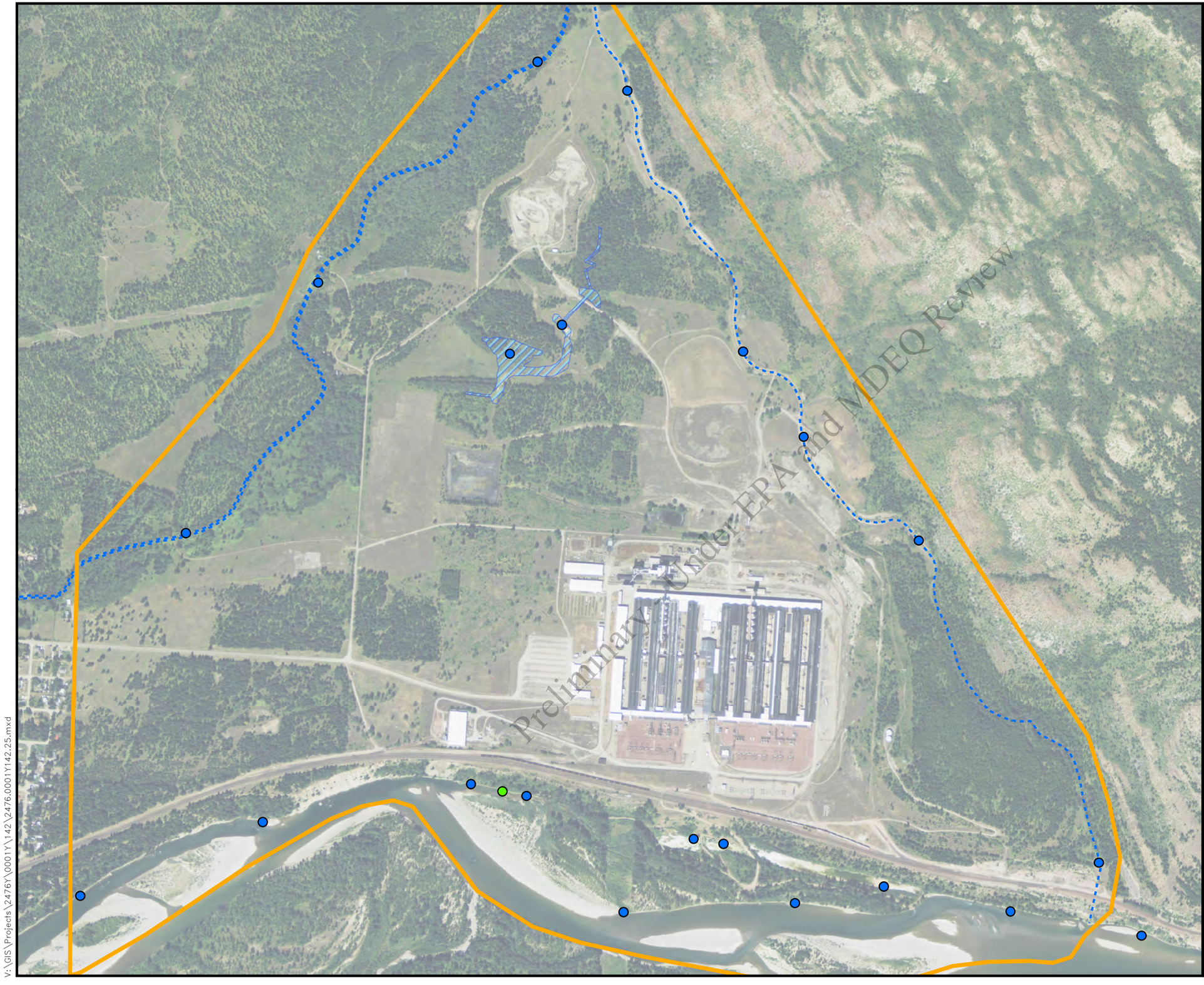
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X4
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.24.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.24.mxd



N

Concentration Legend

- Analyte Not Detected (1.5U)
- ND – 2
- 2 – 4
- 4 – 6
- >6

Chemical Name	Cobalt
DEQ–7 Aquatic Life Standards Acute	--
DEQ–7 Aquatic Life Standards Chronic	--
DEQ–7 Human Health Standards	--
EPA MCL	--
EPA Risk Based Screening Level Tapwater RSL	0.6

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
1.5U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900 Feet

Title:

CONCENTRATIONS OF COBALT IN SURFACE WATER

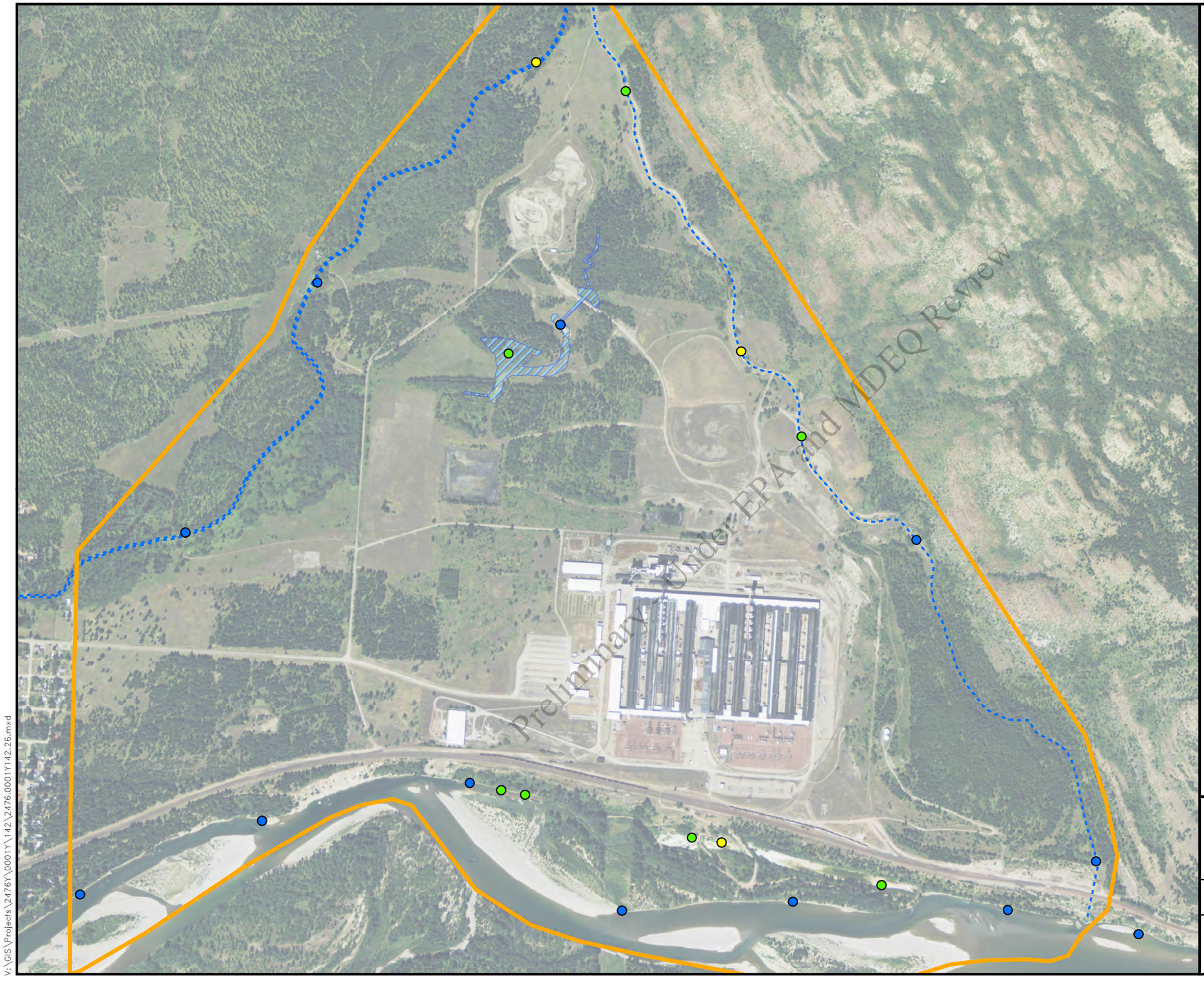
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X5
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.25.mxd		

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N

Concentration Legend

- Analyte Not Detected (1.6U)
- ND – 2.85
- 2.85 – 13000
- 1300 – 13000
- >13000

Chemical Name	Copper
DEQ–7 Aquatic Life Standards Acute	3.79
DEQ–7 Aquatic Life Standards Chronic	2.85
DEQ–7 Human Health Standards	1300
EPA MCL	1300
EPA Risk Based Screening Level Tapwater RSL	80

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
1.6U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900 Feet

Title:

CONCENTRATIONS OF COPPER IN SURFACE WATER

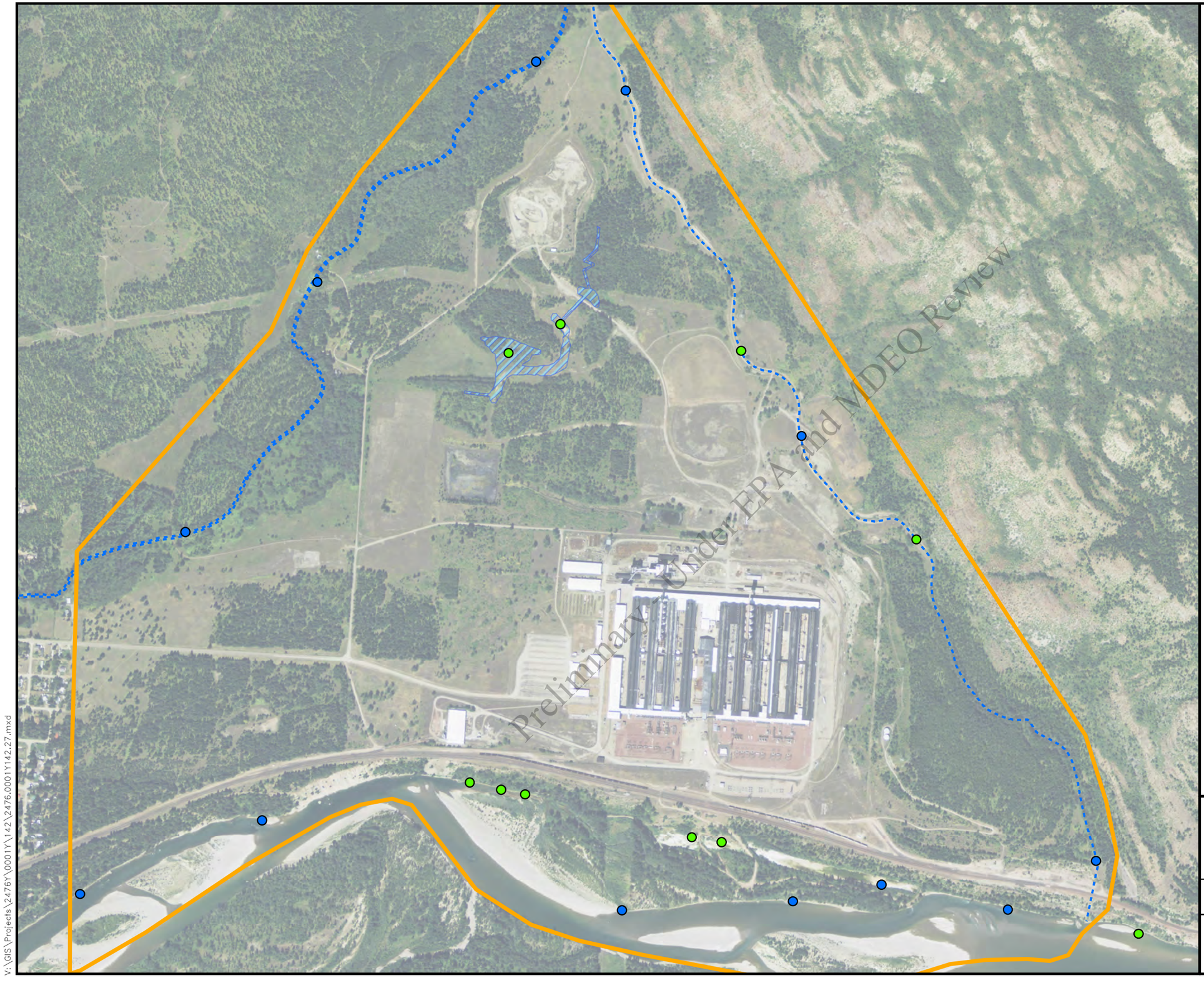
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X6
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.26.mxd		

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N

Concentration Legend

- Analyte Not Detected (49.1U)
- ND – 1000
- 1000 – 1400
- 1400 – 14000
- >14000

Chemical Name	Iron
DEQ–7 Aquatic Life Standards Acute	--
DEQ–7 Aquatic Life Standards Chronic	1000
DEQ–7 Human Health Standards	--
EPA MCL	--
EPA Risk Based Screening Level Tapwater RSL	1400

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
49.1U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:

CONCENTRATIONS OF IRON IN SURFACE WATER

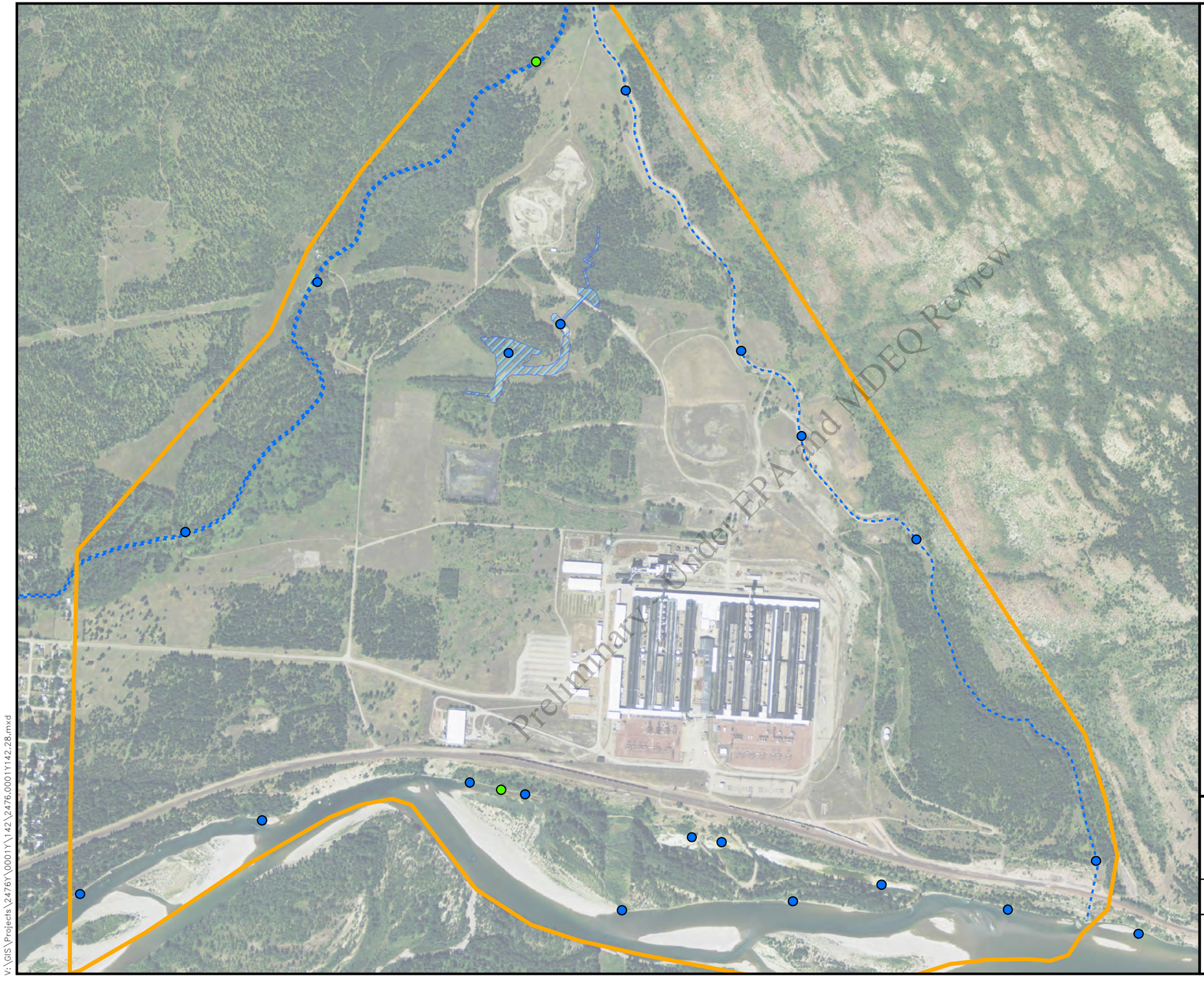
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X7
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.27.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.27.mxd



N

Concentration Legend

- Analyte Not Detected (.44U)
- ND – 0.545
- 0.545 – 15
- 15 – 150
- >150

Chemical Name	Lead
DEQ–7 Aquatic Life Standards Acute	13.93
DEQ–7 Aquatic Life Standards Chronic	0.545
DEQ–7 Human Health Standards	15
EPA MCL	15
EPA Risk Based Screening Level Tapwater RSL	15

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
.44U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:

CONCENTRATIONS OF LEAD IN SURFACE WATER

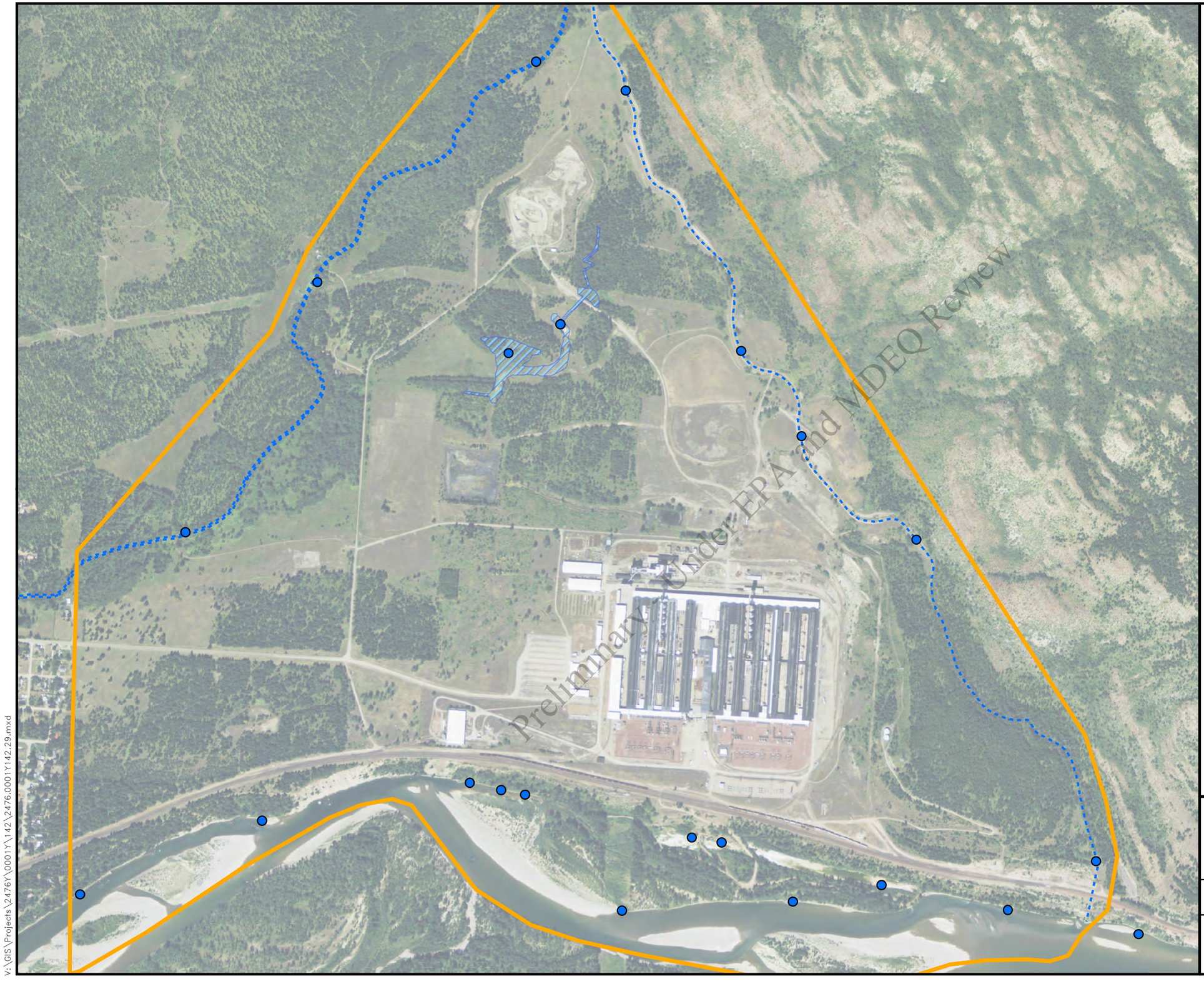
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X8
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.28.mxd		

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N

Concentration Legend

- Analyte Not Detected (0.31U)
- ND – 0.5
- 0.5 – 2
- 2 – 20
- >20

Chemical Name	Thallium
DEQ–7 Aquatic Life Standards Acute	--
DEQ–7 Aquatic Life Standards Chronic	--
DEQ–7 Human Health Standards	0.24
EPA MCL	2
EPA Risk Based Screening Level Tapwater RSL	0.02

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
.31U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900 Feet

Title:

CONCENTRATIONS OF THALLIUM IN SURFACE WATER

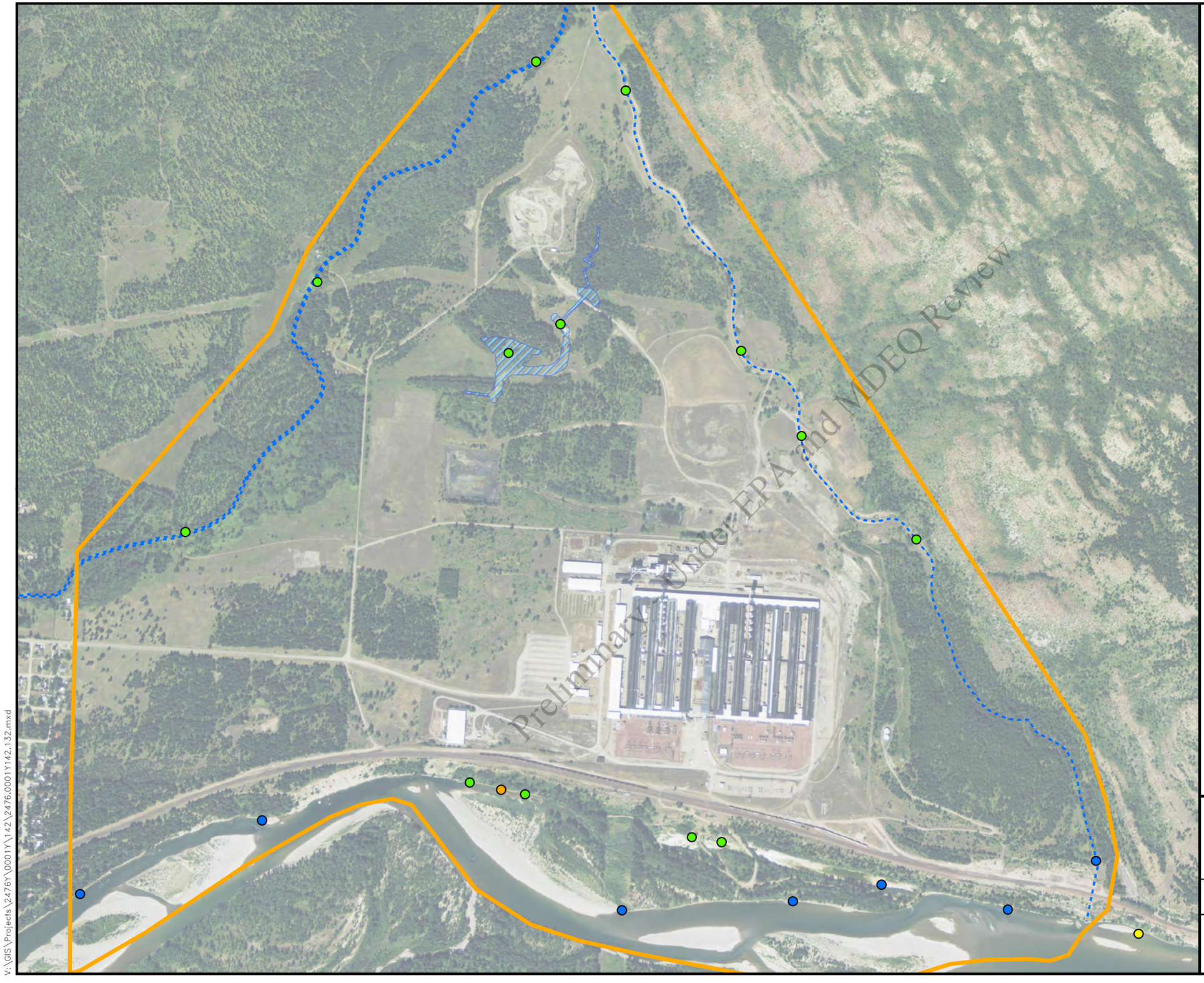
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X9
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.29.mxd		

V:\GIS\Projects\2476Y\0001Y\142\2476.0001Y142.29.mxd



N

Concentration Legend

- Analyte Not Detected (2.5U)
- ND – 21.5
- 21.5 – 43
- 43 – 430
- >430

Chemical Name	Manganese
DEQ–7 Aquatic Life Standards Acute	--
DEQ–7 Aquatic Life Standards Chronic	--
DEQ–7 Human Health Standards	--
EPA MCL	--
EPA Risk Based Screening Level Tapwater RSL	43

Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
2.5U – Highest Method Detection Limit (MDL) in Sample Set

450 0 450 900
Feet

Title:

CONCENTRATIONS OF MANGANESE IN SURFACE WATER

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 23FEB17	FIGURE
Prepared by: M.R.	Scale: AS SHOWN	X10
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File: 2476.0001Y142.132.mxd		

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APPENDIX Y

Sediment Laboratory Analytical Data Tables

1. Concentrations of Cyanide and Fluoride in Sediment
2. Concentrations of PAHs in Sediment
3. Concentrations of Selected Metals in Sediment
4. Pesticides in Sediment
5. General Chemistry in Sediment

Preliminary - Under EPA and MDEQ Review

Table Y1. Semivolatile Organic Compounds in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFSDP-003 Sample Date: 09 Sep 2016 Sample Designation: CFSDP-003-SD Sample Type: N Surface Water Feature: Seep Area / Flathead River	Sample Location: CFSDP-004 Sample Date: 09 Sep 2016 Sample Designation: CFSDP-004-SD Sample Type: N Surface Water Feature: Seep Area / Flathead River	Sample Location: CFSDP-005 Sample Date: 09 Sep 2016 Sample Designation: CFSDP-005-SD Sample Type: N Surface Water Feature: Seep Area / Flathead River	Sample Location: CFSDP-006 Sample Date: 09 Sep 2016 Sample Designation: CFSDP-006-SD Sample Type: N Surface Water Feature: Flathead River	Sample Location: CFSDP-014 Sample Date: 29 Aug 2016 Sample Designation: CFSDP-014-SD Sample Type: N Surface Water Feature: Cedar Creek Upstream	Sample Location: CFSDP-015 Sample Date: 29 Aug 2016 Sample Designation: CFSDP-015-SD Sample Type: N Surface Water Feature: Cedar Creek	Sample Location: CFSDP-016 Sample Date: 29 Aug 2016 Sample Designation: CFSDP-016-SD Sample Type: N Surface Water Feature: Cedar Creek	Sample Location: CFSDP-018 Sample Date: 07 Sep 2016 Sample Designation: CFSDP-018-SD Sample Type: N Surface Water Feature: South Percolation Ponds	Sample Location: CFSDP-019 Sample Date: 07 Sep 2016 Sample Designation: CFSDP-019-SD Sample Type: N Surface Water Feature: South Percolation Ponds	Sample Location: CFSDP-020 Sample Date: 07 Sep 2016 Sample Designation: CFSDP-020-SD Sample Type: N Surface Water Feature: South Percolation Ponds
1,1'-Biphenyl	20	4.7	0.00087	mg/kg	0.12 U	0.096 U	0.088 U	0.034 U	0.089 U	0.085 U	0.094 U	0.052 U	0.13 U	0.088 U
1,2,4,5-Tetrachlorobenzene	35	2.3	0.00079	mg/kg	0.1 U	0.084 U	0.076 U	0.03 U	0.077 U	0.074 U	0.082 U	0.045 U	0.12 U	0.077 U
1,4-Dioxane	24	5.3	0.000094	mg/kg	0.38 UJ	0.3 UJ	0.27 UJ	0.11 U	0.28 U	0.27 U	0.3 U	0.16 U	0.42 U	0.28 U
2,2'-oxybis[1-chloropropane]	4700	310	0.026	mg/kg	0.058 U	0.046 U	0.042 U	0.016 U	0.043 U	0.041 U	0.045 U	0.025 U	0.065 U	0.043 U
2,3,4,6-Tetrachlorophenol	2500	190	0.018	mg/kg	0.13 U	0.11 U	0.097 U	0.037 U	0.098 U	0.094 U	0.1 U	0.057 U	0.15 U	0.097 U
2,4,5-Trichlorophenol	8200	630	0.4	mg/kg	0.14 U	0.11 U	0.1 U	0.04 U	0.1 U	0.099 U	0.11 U	0.06 U	0.16 U	0.1 U
2,4,6-Trichlorophenol	82	6.3	0.0012	mg/kg	0.04 U	0.032 U	0.029 U	0.011 U	0.03 U	0.028 U	0.031 U	0.017 U	0.045 U	0.029 U
2,4-Dichlorophenol	250	19	0.0023	mg/kg	0.033 U	0.027 U	0.024 U	0.0094 U	0.024 U	0.024 U	0.026 U	0.014 U	0.037 U	0.024 U
2,4-Dimethylphenol	1600	130	0.042	mg/kg	0.31 U	0.25 U	0.23 U	0.088 U	0.23 U	0.22 U	0.24 U	0.13 U	0.35 U	0.23 U
2,4-Dinitrophenol	160	13	0.0044	mg/kg	1.1 U	0.85 U	0.78 U	0.3 U	0.78 UJ	0.75 UJ	0.84 UJ	0.46 U	1.2 U	0.78 U
2,4-Dinitrotoluene	7.4	1.7	0.00032	mg/kg	0.056 U	0.045 U	0.041 U	0.016 U	0.041 U	0.04 U	0.044 U	0.024 U	0.063 U	0.041 U
2,6-Dinitrotoluene	1.5	0.36	0.000067	mg/kg	0.075 U	0.06 U	0.055 U	0.021 U	0.055 U	0.053 U	0.059 U	0.032 U	0.084 U	0.055 U
2-Chloronaphthalene	6000	480	0.39	mg/kg	0.032 U	0.026 U	0.023 U	0.009 U	0.024 U	0.023 U	0.025 U	0.014 U	0.036 U	0.023 U
2-Chlorophenol	580	39	0.0089	mg/kg	0.036 U	0.029 U	0.026 U	0.01 U	0.026 U	0.025 U	0.028 U	0.015 U	0.04 U	0.026 U
2-Methylnaphthalene	300	24	0.019	mg/kg	0.031 U	0.025 U	0.023 U	0.0088 U	0.023 U	0.022 U	0.024 U	0.013 U	0.035 U	0.023 U
2-Methylphenol	4100	320	0.075	mg/kg	0.061 U	0.049 U	0.045 U	0.017 U	0.045 U	0.043 U	0.048 U	0.026 U	0.069 U	0.045 U
2-Nitroaniline	800	63	0.008	mg/kg	0.046 U	0.037 U	0.034 U	0.013 U	0.034 U	0.033 U	0.036 U	0.02 U	0.052 U	0.034 U
2-Nitrophenol	--	--	--	mg/kg	0.047 U	0.038 U	0.034 U	0.013 U	0.035 U	0.034 U	0.037 U	0.02 U	0.053 U	0.035 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.49 J	0.22 J	0.027 U	0.011 U	0.028 U	0.027 U	0.029 U	0.016 U	0.042 U	0.028 U
3,3'-Dichlorobenzidine	5.1	1.2	0.00082	mg/kg	0.16 U	0.13 U	0.11 U	0.044 U	0.12 U	0.11 U	0.12 U	0.068 U	0.18 U	0.12 U
3-Nitroaniline	--	--	--	mg/kg	0.042 U	0.033 U	0.03 U	0.012 U	0.031 U	0.03 U	0.033 U	0.018 U	0.047 U	0.031 U
4,6-Dinitro-2-methylphenol	6.6	0.51	0.00026	mg/kg	0.38 U	0.3 U	0.27 U	0.11 U	0.28 U	0.27 U	0.29 U	0.16 U	0.42 U	0.28 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.044 U	0.036 U	0.032 U	0.013 U	0.033 U	0.031 U	0.035 U	0.019 U	0.05 U	0.033 U
4-Chloro-3-methylphenol	8200	630	0.17	mg/kg	0.06 U	0.048 U	0.044 U	0.017 U	0.045 U	0.043 U	0.047 U	0.026 U	0.068 U	0.044 U
4-Chloroaniline	11	2.7	0.00016	mg/kg	0.036 U	0.029 U	0.026 U	0.01 U	0.027 U	0.026 U	0.028 U	0.016 U	0.041 U	0.027 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.042 U	0.034 U	0.031 U	0.012 U	0.031 U	0.03 U	0.033 U	0.018 U	0.047 U	0.031 U
4-Nitroaniline	110	25	0.0016	mg/kg	0.053 U	0.043 U	0.039 U	0.015 U	0.039 U	0.038 U	0.042 U	0.023 U	0.06 U	0.039 U
4-Nitrophenol	--	--	--	mg/kg	0.68 U	0.54 U	0.49 U	0.19 U	0.5 U	0.48 U	0.53 U	0.29 U	0.76 U	0.5 U
Acenaphthene	4500	360	0.55	mg/kg	0.034 U	0.027 U	0.025 U	0.0096 U	0.025 U	0.024 U	0.027 U	0.015 U	0.038 U	0.025 U
Acenaphthylene	--	--	--	mg/kg	0.036 U	0.029 U	0.026 U	0.01 U	0.027 U	0.026 U	0.028 U	0.016 U	0.041 U	0.027 U
Acetophenone	12000	780	0.058	mg/kg	0.031 U	0.025 U	0.022 U	0.0087 U	0.023 U	0.022 U	0.024 U	0.013 U	0.034 U	0.023 U
Anthracene	23000	1800	5.8	mg/kg	0.13 U	0.11 U	0.097 U	0.038 U	0.099 U	0.095 U	0.1 U	0.058 U	0.15 U	0.098 U
Atrazine	10	2.4	0.0002	mg/kg	0.063 U	0.05 U	0.046 U	0.018 U	0.046 U	0.044 U	0.049 U	0.027 U	0.07 U	0.046 U
Benzaldehyde	820	170	0.0041	mg/kg	0.11 U	0.086 U	0.078 U	0.03 U	0.079 U	0.15 J	0.17 J	0.046 U	0.12 U	0.079 U
Benzo[a]anthracene	**2.9**	0.16	0.0042	mg/kg	0.12 U	0.094 U	0.086 U	0.033 U	0.087 U	0.083 U	0.12	0.21	0.16	0.15
Benzo[a]pyrene	**0.29**	0.016	0.004	mg/kg	0.1 J	0.034 U	0.031 U	0.012 U	0.031 U	0.043 J	0.094 J	0.26	0.19	0.19
Benzo[b]fluoranthene	**2.9**	0.16	0.041	mg/kg	0.3	0.044 U	0.04 U	0.016 U	0.04 U	0.039 U	0.12	0.37	0.27	0.28
Benzo[g,h,i]perylene	--	--	--	mg/kg	0.14 J	0.065 U	0.059 U	0.023 U	0.06 U	0.057 U	0.081 J	0.51 J	0.28 J	0.27 J
Benzo[k]fluoranthene	**29**	1.6	0.4	mg/kg	0.11 J	0.049 U	0.045 U	0.017 U	0.045 U	0.043 U	0.048 U	0.17	0.086 J	0.11
Bis(2-chloroethoxy)methane	250	19	0.0013	mg/kg	0.044 U	0.035 U	0.032 U	0.012 U	0.032 U	0.031 U	0.034 U	0.019 U	0.049 U	0.032 U
Bis(2-chloroethyl)ether	1	0.23	0.0000036	mg/kg	0.033 U	0.027 U	0.024 U	0.0094 U	0.024 U	0.024 U	0.026 U	0.014 U	0.037 U	0.024 U
Bis(2-ethylhexyl) phthalate	160	39	1.3	mg/kg	0.055 U	0.044 U	0.04 U	0.016 U	0.04 U	0.04 J	0.043 U	0.024 U	0.062 U	0.04 U
Butyl benzyl phthalate	1200	290	0.24	mg/kg	0.043 U	0.035 U	0.032 U	0.012 U	0.032 U	0.031 U	0.034 U	0.019 U	0.049 U	0.032 U
Caprolactam	40000	3100	0.25	mg/kg	0.1 U	0.081 U	0.074 U	0.029 U	0.075 U	0.072 U	0.08 U	0.044 U	0.11 U	0.075 U
Carbazole	--	--	--	mg/kg	0.035 U	0.028 U	0.025 U	0.0099 U	0.026 U	0.025 U	0.027 U	0.052 J	0.039 U	0.029 J

Preliminary - Under EPA and MDEQ Review

Table Y1. Semivolatile Organic Compounds in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

					Sample Location:	CFSDP-003	CFSDP-004	CFSDP-005	CFSDP-006	CFSDP-014	CFSDP-015	CFSDP-016	CFSDP-018	CFSDP-019	CFSDP-020
					Sample Date:	09 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	07 Sep 2016	07 Sep 2016	07 Sep 2016
					Sample Designation:	CFSDP-003-SD	CFSDP-004-SD	CFSDP-005-SD	CFSDP-006-SD	CFSDP-014-SD	CFSDP-015-SD	CFSDP-016-SD	CFSDP-018-SD	CFSDP-019-SD	CFSDP-020-SD
					Sample Type:	N	N	N	N	N	N	N	N	N	N
Chrysene	290	16	1.2	mg/kg		0.48 J	0.031 U	0.028 U	0.011 U	0.038 J	0.069 J	0.13 J	0.33 J	0.23 J	0.23 J
Dibenz(a,h)anthracene	**0.29**	0.016	0.013	mg/kg		0.073 U	0.059 U	0.053 U	0.021 U	0.054 U	0.052 U	0.058 U	0.084	0.082 U	0.055 J
Dibenzofuran	100	7.3	0.015	mg/kg		0.043 U	0.034 U	0.031 U	0.012 U	0.031 U	0.03 U	0.033 U	0.018 U	0.048 U	0.031 U
Diethyl phthalate	66000	5100	0.61	mg/kg		0.04 U	0.032 U	0.029 U	0.011 U	0.03 U	0.028 U	0.031 U	0.017 U	0.045 U	0.029 U
Dimethyl phthalate	--	--	--	mg/kg		0.041 U	0.033 U	0.03 U	0.012 U	0.03 U	0.029 U	0.032 U	0.018 U	0.046 U	0.03 U
Di-n-butyl phthalate	8200	630	0.23	mg/kg		0.042 U	0.034 U	0.031 U	0.012 U	0.031 U	0.03 U	0.033 U	0.018 U	0.047 U	0.031 U
Di-n-octyl phthalate	820	63	5.7	mg/kg		0.071 U	0.057 U	0.052 U	0.02 U	0.053 U	0.051 U	0.056 U	0.031 U	0.08 U	0.053 U
Fluoranthene	3000	240	8.9	mg/kg		0.48 J	0.033 U	0.03 U	0.012 U	0.042 J	0.08 J	0.19 J	0.3 J	0.23 J	0.21 J
Fluorene	3000	240	0.54	mg/kg		0.031 U	0.025 U	0.022 U	0.0087 U	0.023 U	0.022 U	0.024 U	0.013 U	0.034 U	0.023 U
Hexachlorobenzene	0.96	0.21	0.00012	mg/kg		0.057 U	0.046 U	0.042 U	0.016 U	0.042 U	0.04 U	0.045 U	0.025 U	0.064 U	0.042 U
Hexachlorobutadiene	5.3	1.2	0.00027	mg/kg		0.04 U	0.032 U	0.029 U	0.011 U	0.029 U	0.028 U	0.031 U	0.017 U	0.044 U	0.029 U
Hexachlorocyclopentadiene	0.75	0.18	0.00013	mg/kg		0.088 U	0.07 U	0.064 U	0.025 U	0.065 U	0.062 U	0.069 U	0.038 U	0.098 U	0.065 U
Hexachloroethane	8	1.8	0.0002	mg/kg		0.051 U	0.041 U	0.038 U	0.015 U	0.038 U	0.037 U	0.04 U	0.022 U	0.058 U	0.038 U
Indeno[1,2,3-cd]pyrene	**2.9**	0.16	0.13	mg/kg		0.2	0.075 U	0.068 U	0.027 U	0.069 U	0.066 U	0.087 J+	0.36	0.26	0.25
Isophorone	2400	570	0.026	mg/kg		0.03 U	0.024 U	0.022 U	0.0086 U	0.078 J	0.021 U	0.06 J	0.013 U	0.034 U	0.022 U
Naphthalene	17	3.8	0.00054	mg/kg		0.036 U	0.029 U	0.026 U	0.01 U	0.026 U	0.025 U	0.028 U	0.015 U	0.04 U	0.026 U
Nitrobenzene	22	5.1	0.000092	mg/kg		0.044 U	0.036 U	0.032 U	0.013 U	0.033 U	0.031 U	0.035 U	0.019 U	0.05 U	0.033 U
N-Nitrosodi-n-propylamine	0.33	0.078	0.0000081	mg/kg		0.047 U	0.038 U	0.034 U	0.013 U	0.035 U	0.034 U	0.037 U	0.02 U	0.053 U	0.035 U
N-Nitrosodiphenylamine	470	110	0.067	mg/kg		0.13 U	0.1 U	0.093 U	0.036 U	0.094 U	0.091 U	0.1 U	0.055 U	0.14 U	0.094 U
Pentachlorophenol	4	1	0.000057	mg/kg		0.17 U	0.14 U	0.12 U	0.048 U	0.13 U	0.12 U	0.13 U	0.074 U	0.19 U	0.13 U
Phenanthrene	--	--	--	mg/kg		0.037 U	0.03 U	0.027 U	0.011 U	0.039 J	0.072 J	0.17 J	0.13 J	0.11 J	0.11 J
Phenol	25000	1900	0.33	mg/kg		0.046 U	0.037 U	0.034 U	0.013 U	0.034 U	0.033 U	0.036 U	0.02 U	0.052 U	0.034 U
Pyrene	2300	180	1.3	mg/kg		0.31 J	0.051 U	0.047 U	0.018 U	0.047 U	0.069 J	0.16 J	0.35 J	0.25 J	0.29 J

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y1. Semivolatile Organic Compounds in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-023	CFSDP-023	CFSDP-024
				Sample Date:	07 Sep 2016	07 Sep 2016	07 Sep 2016
				Sample Designation:	CFSDP-023-SD	CFSDP-DUP2-SD	CFSDP-024-SD
				Sample Type:	N	FD	N
				Surface Water Feature:	Northeast Percolation Pond	Northeast Percolation Pond	Northeast Percolation Pond
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit			
1,1'-Biphenyl	20	4.7	0.00087	mg/kg	0.2 U	0.4 U	0.87 U
1,2,4,5-Tetrachlorobenzene	35	2.3	0.00079	mg/kg	0.17 U	0.34 U	0.76 U
1,4-Dioxane	24	5.3	0.000094	mg/kg	0.62 U	1.2 U	2.7 U
2,2'-oxybis[1-chloropropane]	4700	310	0.026	mg/kg	0.095 U	0.19 U	0.42 U
2,3,4,6-Tetrachlorophenol	2500	190	0.018	mg/kg	0.22 U	0.44 U	0.96 U
2,4,5-Trichlorophenol	8200	630	0.4	mg/kg	0.23 U	0.46 U	1 U
2,4,6-Trichlorophenol	82	6.3	0.0012	mg/kg	0.066 U	0.13 U	0.29 U
2,4-Dichlorophenol	250	19	0.0023	mg/kg	0.054 U	0.11 U	0.24 U
2,4-Dimethylphenol	1600	130	0.042	mg/kg	0.51 U	1 U	2.2 U
2,4-Dinitrophenol	160	13	0.0044	mg/kg	1.7 U	3.5 U	7.7 U
2,4-Dinitrotoluene	7.4	1.7	0.00032	mg/kg	0.091 U	0.18 U	0.4 U
2,6-Dinitrotoluene	1.5	0.36	0.000067	mg/kg	0.12 U	0.25 U	0.54 U
2-Chloronaphthalene	6000	480	0.39	mg/kg	0.052 U	0.11 U	0.23 U
2-Chlorophenol	580	39	0.0089	mg/kg	0.059 U	0.12 U	0.26 U
2-Methylnaphthalene	300	24	0.019	mg/kg	0.13 J	0.15 J	0.52 J
2-Methylphenol	4100	320	0.075	mg/kg	0.1 U	0.2 U	0.44 U
2-Nitroaniline	800	63	0.008	mg/kg	0.076 U	0.15 U	0.34 U
2-Nitrophenol	--	--	--	mg/kg	0.078 U	0.16 U	0.34 U
3 & 4 Methylphenol	--	--	--	mg/kg	0.061 U	0.12 U	0.27 U
3,3'-Dichlorobenzidine	5.1	1.2	0.00082	mg/kg	0.26 U	0.52 U	1.1 U
3-Nitroaniline	--	--	--	mg/kg	0.068 U	0.14 U	0.3 U
4,6-Dinitro-2-methylphenol	6.6	0.51	0.00026	mg/kg	0.62 U	1.2 U	2.7 U
4-Bromophenyl phenyl ether	--	--	--	mg/kg	0.073 U	0.15 U	0.32 U
4-Chloro-3-methylphenol	8200	630	0.17	mg/kg	0.099 U	0.2 U	0.44 U
4-Chloroaniline	11	2.7	0.00016	mg/kg	0.13 J	0.12 U	0.26 U
4-Chlorophenyl phenyl ether	--	--	--	mg/kg	0.069 U	0.14 U	0.3 U
4-Nitroaniline	110	25	0.0016	mg/kg	0.087 U	0.18 U	0.38 U
4-Nitrophenol	--	--	--	mg/kg	1.1 U	2.2 U	4.9 U
Acenaphthene	4500	360	0.55	mg/kg	0.28 J	0.32 J	4.1 J
Acenaphthylene	--	--	--	mg/kg	0.086 J	0.12 U	0.26 U
Acetophenone	12000	780	0.058	mg/kg	0.05 U	0.1 U	0.22 U
Anthracene	23000	1800	5.8	mg/kg	1.7 J	1.3 J	9.9 J
Atrazine	10	2.4	0.0002	mg/kg	0.1 U	0.21 U	0.45 U
Benzaldehyde	820	170	0.0041	mg/kg	0.18 U	0.35 U	0.77 U
Benzo[a]anthracene	**2.9**	0.16	0.0042	mg/kg	**14**	**15**	**76**
Benzo[a]pyrene	**0.29**	0.016	0.004	mg/kg	**19**	**21**	**100**
Benzo[b]fluoranthene	**2.9**	0.16	0.041	mg/kg	**40**	**55**	**210**
Benzo[g,h,i]perylene	--	--	--	mg/kg	13	20	150
Benzo[k]fluoranthene	**29**	1.6	0.4	mg/kg	17	18	**64**
Bis(2-chloroethoxy)methane	250	19	0.0013	mg/kg	0.072 U	0.14 U	0.32 U
Bis(2-chloroethyl)ether	1	0.23	0.0000036	mg/kg	0.054 U	0.11 U	0.24 U
Bis(2-ethylhexyl) phthalate	160	39	1.3	mg/kg	0.18 J	0.18 U	0.4 U
Butyl benzyl phthalate	1200	290	0.24	mg/kg	0.071 U	0.14 U	0.31 U
Caprolactam	40000	3100	0.25	mg/kg	0.17 U	0.33 U	0.73 U
Carbazole	--	--	--	mg/kg	1 J	0.97 J	9.6 J

Preliminary - Under EPA and MDEQ Review

Table Y1. Semivolatile Organic Compounds in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSDP-023	CFSDP-023	CFSDP-024
			Sample Date:		07 Sep 2016	07 Sep 2016	07 Sep 2016
			Sample Designation:		CFSDP-023-SD	CFSDP-DUP2-SD	CFSDP-024-SD
			Sample Type:		N	FD	N
Chrysene	290	16	1.2	mg/kg	18	19	150
Dibenz(a,h)anthracene	**0.29**	0.016	0.013	mg/kg	**4.8**	**6.1**	**40**
Dibenzofuran	100	7.3	0.015	mg/kg	0.53 J	0.58 J	1.4 J
Diethyl phthalate	66000	5100	0.61	mg/kg	0.066 U	0.13 U	0.29 U
Dimethyl phthalate	--	--	--	mg/kg	0.067 U	0.13 U	0.3 U
Di-n-butyl phthalate	8200	630	0.23	mg/kg	0.069 U	0.14 U	0.3 U
Di-n-octyl phthalate	820	63	5.7	mg/kg	0.12 U	0.24 U	0.52 U
Fluoranthene	3000	240	8.9	mg/kg	21	17	120
Fluorene	3000	240	0.54	mg/kg	0.11 J	0.12 J	2.1 J
Hexachlorobenzene	0.96	0.21	0.00012	mg/kg	0.094 U	0.19 U	0.41 U
Hexachlorobutadiene	5.3	1.2	0.00027	mg/kg	0.065 U	0.13 U	0.29 U
Hexachlorocyclopentadiene	0.75	0.18	0.00013	mg/kg	0.14 U	0.29 U	0.63 U
Hexachloroethane	8	1.8	0.0002	mg/kg	0.085 U	0.17 U	0.37 U
Indeno[1,2,3-cd]pyrene	**2.9**	0.16	0.13	mg/kg	**15**	**23**	**140**
Isophorone	2400	570	0.026	mg/kg	0.05 U	0.1 U	0.22 U
Naphthalene	17	3.8	0.00054	mg/kg	0.39 J	0.45 J	0.89 J
Nitrobenzene	22	5.1	0.000092	mg/kg	0.073 U	0.15 U	0.32 U
N-Nitrosodi-n-propylamine	0.33	0.078	0.0000081	mg/kg	0.078 U	0.16 U	0.34 U
N-Nitrosodiphenylamine	470	110	0.067	mg/kg	0.21 U	0.42 U	0.92 U
Pentachlorophenol	4	1	0.000057	mg/kg	0.28 U	0.56 U	1.2 U
Phenanthrene	--	--	--	mg/kg	6.2	6.9	41
Phenol	25000	1900	0.33	mg/kg	0.075 U	0.15 U	0.33 U
Pyrene	2300	180	1.3	mg/kg	16	26	120

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y2. Metals in Sediment

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: / Sample Date: / Sample Designation: / Sample Type: / Surface Water Feature:									
					CFSDP-003 09 Sep 2016 CFSDP-003-SD N Seep Area / Flathead River	CFSDP-004 09 Sep 2016 CFSDP-004-SD N Seep Area / Flathead River	CFSDP-005 09 Sep 2016 CFSDP-005-SD N Seep Area / Flathead River	CFSDP-006 09 Sep 2016 CFSDP-006-SD N Flathead River	CFSDP-014 29 Aug 2016 CFSDP-014-SD N Cedar Creek Upstream	CFSDP-015 29 Aug 2016 CFSDP-015-SD N Cedar Creek	CFSDP-016 29 Aug 2016 CFSDP-016-SD N Cedar Creek	CFSDP-018 07 Sep 2016 CFSDP-018-SD N South Percolation Ponds	CFSDP-019 07 Sep 2016 CFSDP-019-SD N South Percolation Ponds	CFSDP-020 07 Sep 2016 CFSDP-020-SD N South Percolation Ponds
Aluminum	**110000**	7700	3000	mg/kg	8180	7820	7980	7750	10300	8250	9100	5420	2360	9710
Antimony	47	3.1	0.035	mg/kg	0.57 UJ	0.45 UJ	0.38 UJ	0.3 UJ	0.86 U	0.84 U	0.93 U	0.6 UJ	0.64 UJ	0.4 UJ
Arsenic	**3**	0.68	0.0015	mg/kg	**6**	**6.2**	**4.2**	**3.7**	2.3 J	2.1 J	2.3 J	1 J	0.65 U	1.3
Barium	22000	1500	16	mg/kg	149	151	128	80.8	173	151	165	758	476	548
Beryllium	230	16	1.9	mg/kg	0.54 J	0.51 J	0.39 J	0.35 J	0.43 J	0.34 J	0.4 J	0.18 J	0.2 U	0.45 J
Cadmium	98	7.1	0.069	mg/kg	0.61 U	0.48 U	0.4 U	0.32 U	0.91 U	0.89 U	0.99 U	0.64 U	0.68 U	0.42 U
Calcium	--	--	--	mg/kg	24100	19700	16900	11800	13800	14800	16400	273000	166000	133000
Chromium	--	--	--	mg/kg	9.6	9.4	9.3	9.6	9.7	7.7	8.3	8.3	3.3 J	9.7
Cobalt	35	2.3	0.027	mg/kg	5.5	5.2	5.2	5.4	4.2 J	3.2 J	3.5 J	1.4 J	1.4 J	4.6
Copper	4700	310	2.8	mg/kg	13.6	13.8	13.1	9.4	13.6	12.2	13.6	79.1	42.3	26
Cyanide, Total	15	2.3	0.0015	mg/kg	3.2	2	1	0.032 U	0.24 J	0.15 J	0.15 J	1.3 J-	0.27 J-	0.29 J-
Iron	82000	5500	35	mg/kg	14200	13800	13100	15200	10100	7770	8680	2620	1490	9400
Lead	800	400	--	mg/kg	9	8.5	8	5.6	7.6	6.1	6.8	17	5.8	8.6
Magnesium	--	--	--	mg/kg	9700	9720	9890	9590	7710	5410	6010	5410	3470	9270
Manganese	2600	180	2.8	mg/kg	286	172	139	234	280	272	302	28.4	27.5	97.2
Mercury	4.6	1.1	0.0033	mg/kg	0.024 J	0.042	0.019 J	0.013 U	0.032 J	0.036 J	0.044 J	0.11	0.035 J	0.016 J
Nickel	2200	150	2.6	mg/kg	11.6	10.6	10.5	11.3	8.6	6.9	7.1	12.3	5.4	15
Potassium	--	--	--	mg/kg	1080	968	853	617	789	613	672	506	272	979
Selenium	580	39	0.052	mg/kg	0.53 U	0.42 U	0.36 U	0.28 U	0.8 U	0.78 U	0.87 U	0.57 J	0.6 U	0.37 U
Silver	580	39	0.08	mg/kg	1.1 U	0.88 U	0.75 U	0.59 U	1.7 U	1.6 U	1.8 U	1.2 U	1.3 U	0.77 U
Sodium	--	--	--	mg/kg	148 J	106 J	80.7 J	40.8 U	116 U	128 J	148 J	410	284	166
Thallium	1.2	0.078	0.0014	mg/kg	0.23 U	0.18 U	0.15 U	0.12 U	0.34 U	0.33 U	0.37 U	0.24 U	0.25 U	0.16 U
Vanadium	580	39	8.6	mg/kg	10.9	11.5	12	25.5	7.2	5.4	5.9	4.6	2.3 J	15.3
Zinc	35000	2300	37	mg/kg	48.8	38.9	38.6	38.4	47	37.3	48.9	89.4	50.6	44.7

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA & MDEQ Review

Table Y2. Metals in Sediment

Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-023	CFSDP-023	CFSDP-024
				Sample Date:	07 Sep 2016	07 Sep 2016	07 Sep 2016
				Sample Designation:	CFSDP-023-SD	CFSDP-DUP2-SD	CFSDP-024-SD
				Sample Type:	N	FD	N
				Surface Water Feature:	Northeast Percolation Pond	Northeast Percolation Pond	Northeast Percolation Pond
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit			
Aluminum	**110000**	7700	3000	mg/kg	20800	22100	**112000**
Antimony	47	3.1	0.035	mg/kg	0.39 UJ	0.53 J-	2.6 J-
Arsenic	**3**	0.68	0.0015	mg/kg	**7.6**	**7.6**	**26.4**
Barium	22000	1500	16	mg/kg	539	469	317
Beryllium	230	16	1.9	mg/kg	1.6	1.5	4.5
Cadmium	98	7.1	0.069	mg/kg	2.7	2.6	8
Calcium	--	--	--	mg/kg	106000	102000	33400
Chromium	--	--	--	mg/kg	53	52.1	42.3
Cobalt	35	2.3	0.027	mg/kg	5.3	5.4	18.5
Copper	4700	310	2.8	mg/kg	56.4	58.6	83.6
Cyanide, Total	15	2.3	0.0015	mg/kg	0.096 J	0.88 J	7.8 J-
Iron	82000	5500	35	mg/kg	2940	3030	9040
Lead	800	400	--	mg/kg	24.8	24.6	109
Magnesium	--	--	--	mg/kg	2660	2740	4020
Manganese	2600	180	2.8	mg/kg	24.8	25.2	74.7
Mercury	4.6	1.1	0.0033	mg/kg	0.028	0.03	0.1
Nickel	2200	150	2.6	mg/kg	208	215	771
Potassium	--	--	--	mg/kg	351	403	1150
Selenium	580	39	0.052	mg/kg	0.89 J	0.95 J	3.4 J
Silver	580	39	0.08	mg/kg	0.76 U	0.72 U	1 J
Sodium	--	--	--	mg/kg	177	183	840
Thallium	1.2	0.078	0.0014	mg/kg	0.26 J	0.28 J	1.2 J
Vanadium	580	39	8.6	mg/kg	66.1	63.3	233
Zinc	35000	2300	37	mg/kg	349	351	871

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y3. Polychlorinated Biphenyl in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSDP-003	CFSDP-004	CFSDP-005	CFSDP-006	CFSDP-014	CFSDP-015	CFSDP-016	CFSDP-018	CFSDP-019
			Sample Date:		09 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	07 Sep 2016	07 Sep 2016
			Sample Designation:		CFSDP-003-SD	CFSDP-004-SD	CFSDP-005-SD	CFSDP-006-SD	CFSDP-014-SD	CFSDP-015-SD	CFSDP-016-SD	CFSDP-018-SD	CFSDP-019-SD
			Sample Type:		N	N	N	N	N	N	N	N	N
			Surface Water Feature:		Seep Area / Flathead River	Seep Area / Flathead River	Seep Area / Flathead River	Flathead River	Cedar Creek Upstream	Cedar Creek	Cedar Creek	South Percolation Ponds	South Percolation Ponds
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit									
Aroclor 1016	5.1	0.41	0.013	mg/kg	0.019 U	0.015 U	0.014 U	0.011 U	0.028 U	0.027 U	0.03 U	0.016 U	0.021 U
Aroclor 1221	0.83	0.2	0.00008	mg/kg	0.019 U	0.015 U	0.014 U	0.011 U	0.028 U	0.027 U	0.03 U	0.016 U	0.021 U
Aroclor 1232	0.72	0.17	0.00008	mg/kg	0.019 U	0.015 U	0.014 U	0.011 U	0.028 U	0.027 U	0.03 U	0.016 U	0.021 U
Aroclor 1242	0.95	0.23	0.0012	mg/kg	0.019 U	0.015 U	0.014 U	0.011 U	0.028 U	0.027 U	0.03 U	0.016 U	0.021 U
Aroclor 1248	0.95	0.23	0.0012	mg/kg	0.019 U	0.015 U	0.014 U	0.011 U	0.028 U	0.027 U	0.03 U	0.016 U	0.021 U
Aroclor 1254	0.97	0.12	0.002	mg/kg	0.02 U	0.016 U	0.014 U	0.011 U	0.029 U	0.028 U	0.031 U	0.017 U	0.022 U
Aroclor 1260	0.99	0.24	0.0055	mg/kg	0.02 U	0.016 U	0.014 U	0.011 U	0.029 U	0.028 U	0.031 U	0.017 U	0.022 U
Aroclor 1268	--	--	--	mg/kg	0.02 U	0.016 U	0.014 U	0.011 U	0.029 U	0.028 U	0.031 U	0.017 U	0.022 U
Aroclor-1262	--	--	--	mg/kg	0.02 U	0.016 U	0.014 U	0.011 U	0.029 U	0.028 U	0.031 U	0.017 U	0.022 U
Polychlorinated biphenyls, Total	0.94	0.23	0.0068	mg/kg	0.02 U	0.016 U	0.014 U	0.011 U	0.029 U	0.028 U	0.031 U	0.017 U	0.022 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y3. Polychlorinated Biphenyl in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-020	CFSDP-023	CFSDP-023	CFSDP-024
				Sample Date:	07 Sep 2016	07 Sep 2016	07 Sep 2016	07 Sep 2016
				Sample Designation:	CFSDP-020-SD	CFSDP-023-SD	CFSDP-DUP2-SD	CFSDP-024-SD
				Sample Type:	N	N	FD	N
				Surface Water Feature:	South Percolation Ponds	Northeast Percolation Pond	Northeast Percolation Pond	Northeast Percolation Pond
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit				
Aroclor 1016	5.1	0.41	0.013	mg/kg	0.014 U	0.012 U	0.012 U	0.014 U
Aroclor 1221	0.83	0.2	0.00008	mg/kg	0.014 U	0.012 U	0.012 U	0.014 U
Aroclor 1232	0.72	0.17	0.00008	mg/kg	0.014 U	0.012 U	0.012 U	0.014 U
Aroclor 1242	0.95	0.23	0.0012	mg/kg	0.014 U	0.012 U	0.012 U	0.014 U
Aroclor 1248	0.95	0.23	0.0012	mg/kg	0.014 U	0.012 U	0.012 U	0.014 U
Aroclor 1254	0.97	0.12	0.002	mg/kg	0.014 U	0.013 U	0.013 U	0.014 U
Aroclor 1260	0.99	0.24	0.0055	mg/kg	0.014 U	0.013 U	0.013 U	0.014 U
Aroclor 1268	--	--	--	mg/kg	0.014 U	0.013 U	0.013 U	0.014 U
Aroclor-1262	--	--	--	mg/kg	0.014 U	0.013 U	0.013 U	0.014 U
Polychlorinated biphenyls, Total	0.94	0.23	0.0068	mg/kg	0.014 U	0.013 U	0.013 U	0.014 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y4. Organochlorine Pesticides in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-003	CFSDP-004	CFSDP-005	CFSDP-006	CFSDP-014	CFSDP-015	CFSDP-016	CFSDP-018	CFSDP-019	CFSDP-020	CFSDP-023
				Sample Date:	09 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	07 Sep 2016	07 Sep 2016	07 Sep 2016	07 Sep 2016
				Sample Designation:	CFSDP-003-SD	CFSDP-004-SD	CFSDP-005-SD	CFSDP-006-SD	CFSDP-014-SD	CFSDP-015-SD	CFSDP-016-SD	CFSDP-018-SD	CFSDP-019-SD	CFSDP-020-SD	CFSDP-023-SD
				Sample Type:	N	N	N	N	N	N	N	N	N	N	N
				Surface Water Feature:	Seep Area / Flathead River	Seep Area / Flathead River	Seep Area / Flathead River	Flathead River	Cedar Creek Upstream	Cedar Creek	Cedar Creek	South Percolation Ponds	South Percolation Ponds	South Percolation Ponds	Northeast Percolation Pond
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit											
4,4'-DDD	9.6	2.3	0.0075	mg/kg	0.0019 U	0.0015 U	0.0014 U	0.0011 U	0.0028 U	0.0027 U	0.0029 U	0.0016 U	0.0021 U	0.0014 U	0.0012 U
4,4'-DDE	9.3	2	0.011	mg/kg	0.0021 U	0.0017 U	0.0015 U	0.0012 U	0.003 U	0.0029 U	0.0032 U	0.0018 U	0.0023 U	0.0015 U	0.0014 U
4,4'-DDT	8.5	1.9	0.077	mg/kg	0.0015 U	0.0012 U	0.0011 U	0.00083 U	0.0022 U	0.0021 U	0.0023 U	0.0013 U	0.0017 U	0.0011 U	0.00096 U
Aldrin	0.18	0.039	0.00015	mg/kg	0.0017 U	0.0014 U	0.0013 U	0.00098 U	0.0025 U	0.0024 U	0.0027 U	0.0015 U	0.0019 U	0.0013 U	0.0011 U
alpha-BHC	0.36	0.086	0.000042	mg/kg	0.0013 U	0.001 U	0.00095 U	0.00074 U	0.0019 U	0.0018 U	0.002 U	0.0011 U	0.0015 U	0.00096 U	0.00085 U
alpha-Chlordane	--	--	--	mg/kg	0.0023 U	0.0019 U	0.0017 U	0.0013 U	0.0034 U	0.0033 U	0.0036 U	0.002 U	0.0026 U	0.0017 U	0.0015 U
beta-BHC	1.3	0.3	0.00015	mg/kg	0.0014 U	0.0011 U	0.001 U	0.00079 U	0.002 U	0.002 U	0.0022 U	0.0012 U	0.0016 U	0.001 U	0.00091 U
delta-BHC	--	--	--	mg/kg	0.0016 U	0.0012 U	0.0011 U	0.00088 U	0.0023 U	0.0022 U	0.0024 U	0.0013 U	0.0017 U	0.0011 U	0.001 U
Dieldrin	0.14	0.034	0.000071	mg/kg	0.0019 U	0.0015 U	0.0014 U	0.0011 U	0.0027 U	0.0026 U	0.0029 U	0.0016 U	0.0021 U	0.0014 U	0.0012 U
Endosulfan I	--	--	--	mg/kg	0.002 U	0.0016 U	0.0014 U	0.0011 U	0.0029 U	0.0028 U	0.0031 U	0.0017 U	0.0022 U	0.0015 U	0.0013 U
Endosulfan II	--	--	--	mg/kg	0.0022 U	0.0018 U	0.0016 U	0.0013 U	0.0033 U	0.0032 U	0.0035 U	0.0019 U	0.0025 U	0.0016 U	0.0015 U
Endosulfan sulfate	--	--	--	mg/kg	0.0017 U	0.0013 U	0.0012 U	0.00094 U	0.0025 U	0.0024 U	0.0026 U	0.0014 U	0.0019 U	0.0012 U	0.0011 U
Endrin	25	1.9	0.0092	mg/kg	0.0018 U	0.0015 U	0.0013 U	0.001 U	0.0027 U	0.0026 U	0.0028 U	0.0016 U	0.002 U	0.0013 U	0.0012 U
Endrin aldehyde	--	--	--	mg/kg	0.0018 U	0.0014 U	0.0013 U	0.001 U	0.0026 U	0.0025 U	0.0028 U	0.0015 U	0.002 U	0.0013 U	0.0012 U
Endrin ketone	--	--	--	mg/kg	0.002 U	0.0016 U	0.0014 U	0.0011 U	0.0029 U	0.0028 U	0.0031 U	0.0017 U	0.0022 U	0.0015 U	0.0013 U
gamma-BHC (Lindane)	2.5	0.57	0.00024	mg/kg	0.0013 U	0.001 U	0.00093 U	0.00072 U	0.0019 U	0.0018 U	0.002 U	0.0011 U	0.0014 U	0.00094 U	0.00084 U
gamma-Chlordane	--	--	--	mg/kg	0.0031 U	0.0025 U	0.0023 U	0.0018 U	0.0046 U	0.0044 U	0.0049 U	0.0027 U	0.0035 U	0.0023 U	0.002 U
Heptachlor	0.63	0.13	0.00012	mg/kg	0.0018 U	0.0015 U	0.0013 U	0.001 U	0.0027 U	0.0026 U	0.0029 U	0.0016 U	0.0021 U	0.0013 U	0.0012 U
Heptachlor epoxide	0.33	0.07	0.000028	mg/kg	0.0028 U	0.0022 U	0.002 U	0.0016 U	0.0041 U	0.004 U	0.0044 U	0.0024 U	0.0031 U	0.0021 U	0.0018 U
Methoxychlor	410	32	0.2	mg/kg	0.003 U	0.0024 U	0.0022 U	0.0017 U	0.0045 U	0.0043 U	0.0048 U	0.0026 U	0.0034 U	0.0022 U	0.002 U
Toxaphene	2.1	0.49	0.011	mg/kg	0.042 U	0.033 U	0.03 U	0.024 U	0.061 U	0.059 U	0.065 U	0.036 U	0.047 U	0.031 U	0.027 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA OU1 ROD Review

Table Y4. Organochlorine Pesticides in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit	Sample Location: CFSDP-023 Sample Date: 07 Sep 2016 Sample Designation: CFSDP-DUP2-SD Sample Type: FD Surface Water Feature: Northeast Percolation Pond	Sample Location: CFSDP-024 Sample Date: 07 Sep 2016 Sample Designation: CFSDP-024-SD Sample Type: N Surface Water Feature: Northeast Percolation Pond
4,4'-DDD	9.6	2.3	0.0075	mg/kg	0.0012 U	0.0014 U
4,4'-DDE	9.3	2	0.011	mg/kg	0.0014 U	0.0015 U
4,4'-DDT	8.5	1.9	0.077	mg/kg	0.00097 U	0.0011 U
Aldrin	0.18	0.039	0.00015	mg/kg	0.0011 U	0.0012 U
alpha-BHC	0.36	0.086	0.000042	mg/kg	0.00086 U	0.00094 U
alpha-Chlordane	--	--	--	mg/kg	0.0015 U	0.0017 U
beta-BHC	1.3	0.3	0.00015	mg/kg	0.00091 U	0.001 U
delta-BHC	--	--	--	mg/kg	0.001 U	0.0011 U
Dieldrin	0.14	0.034	0.000071	mg/kg	0.0012 U	0.0013 U
Endosulfan I	--	--	--	mg/kg	0.0013 U	0.0014 U
Endosulfan II	--	--	--	mg/kg	0.0015 U	0.0016 U
Endosulfan sulfate	--	--	--	mg/kg	0.0011 U	0.0012 U
Endrin	25	1.9	0.0092	mg/kg	0.0012 U	0.0013 U
Endrin aldehyde	--	--	--	mg/kg	0.0012 U	0.0013 U
Endrin ketone	--	--	--	mg/kg	0.0013 U	0.0014 U
gamma-BHC (Lindane)	2.5	0.57	0.00024	mg/kg	0.00084 U	0.00092 U
gamma-Chlordane	--	--	--	mg/kg	0.002 U	0.0022 U
Heptachlor	0.63	0.13	0.00012	mg/kg	0.0012 U	0.0013 U
Heptachlor epoxide	0.33	0.07	0.000028	mg/kg	0.0018 U	0.002 U
Methoxychlor	410	32	0.2	mg/kg	0.002 U	0.0022 U
Toxaphene	2.1	0.49	0.011	mg/kg	0.027 U	0.03 U

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level

Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level

Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y5. General Chemistry in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

			Sample Location:		CFSDP-003	CFSDP-004	CFSDP-005	CFSDP-006	CFSDP-014	CFSDP-015	CFSDP-016	CFSDP-018	CFSDP-019	CFSDP-020
			Sample Date:		09 Sep 2016	09 Sep 2016	09 Sep 2016	09 Sep 2016	29 Aug 2016	29 Aug 2016	29 Aug 2016	07 Sep 2016	07 Sep 2016	07 Sep 2016
			Sample Designation:		CFSDP-003-SD	CFSDP-004-SD	CFSDP-005-SD	CFSDP-006-SD	CFSDP-014-SD	CFSDP-015-SD	CFSDP-016-SD	CFSDP-018-SD	CFSDP-019-SD	CFSDP-020-SD
			Sample Type:		N	N	N	N	N	N	N	N	N	N
			Surface Water Feature:		Seep Area / Flathead River	Seep Area / Flathead River	Seep Area / Flathead River	Flathead River	Cedar Creek Upstream	Cedar Creek	Cedar Creek	South Percolation Ponds	South Percolation Ponds	South Percolation Ponds
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit										
Fluoride	4700	310	12	mg/kg	10.4 J+	8.57 J+	13.7 J+	1.23 J+	1.63 J+	1.41 J+	1.71 J+	19.1	29.4	5.3
Total Organic Carbon (1)	--	--	--	mg/kg	61800	37400	26700	4130	160000	266000	277000	253000	284000	76500

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

Preliminary - Under EPA and MDEQ Review

Table Y5. General Chemistry in Sediment
Columbia Falls Aluminum Company, LLC, Phase I Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

				Sample Location:	CFSDP-023	CFSDP-023	CFSDP-024
				Sample Date:	07 Sep 2016	07 Sep 2016	07 Sep 2016
				Sample Designation:	CFSDP-023-SD	CFSDP-DUP2-SD	CFSDP-024-SD
				Sample Type:	N	FD	N
				Surface Water Feature:	Northeast Percolation Pond	Northeast Percolation Pond	Northeast Percolation Pond
Parameter	EPA Industrial Soil RSL	EPA Residential Soil RSL	EPA Human Health Protection of GW - Risk-based SSL	Unit			
Fluoride	4700	310	12	mg/kg	56.6 J	59.3 J	219
Total Organic Carbon (1)	--	--	--	mg/kg	494000	555000	470000

Bold indicates exceedance of Environmental Protection Agency Industrial Soil Regional Screening Level
Shaded indicates exceedance of Environmental Protection Agency Residnetial Soil Regional Screening Level
Red Indicates exceedance of Environmental Protection Agency Human Health Protection of Ground Water - Risk-based Soil Screening Level

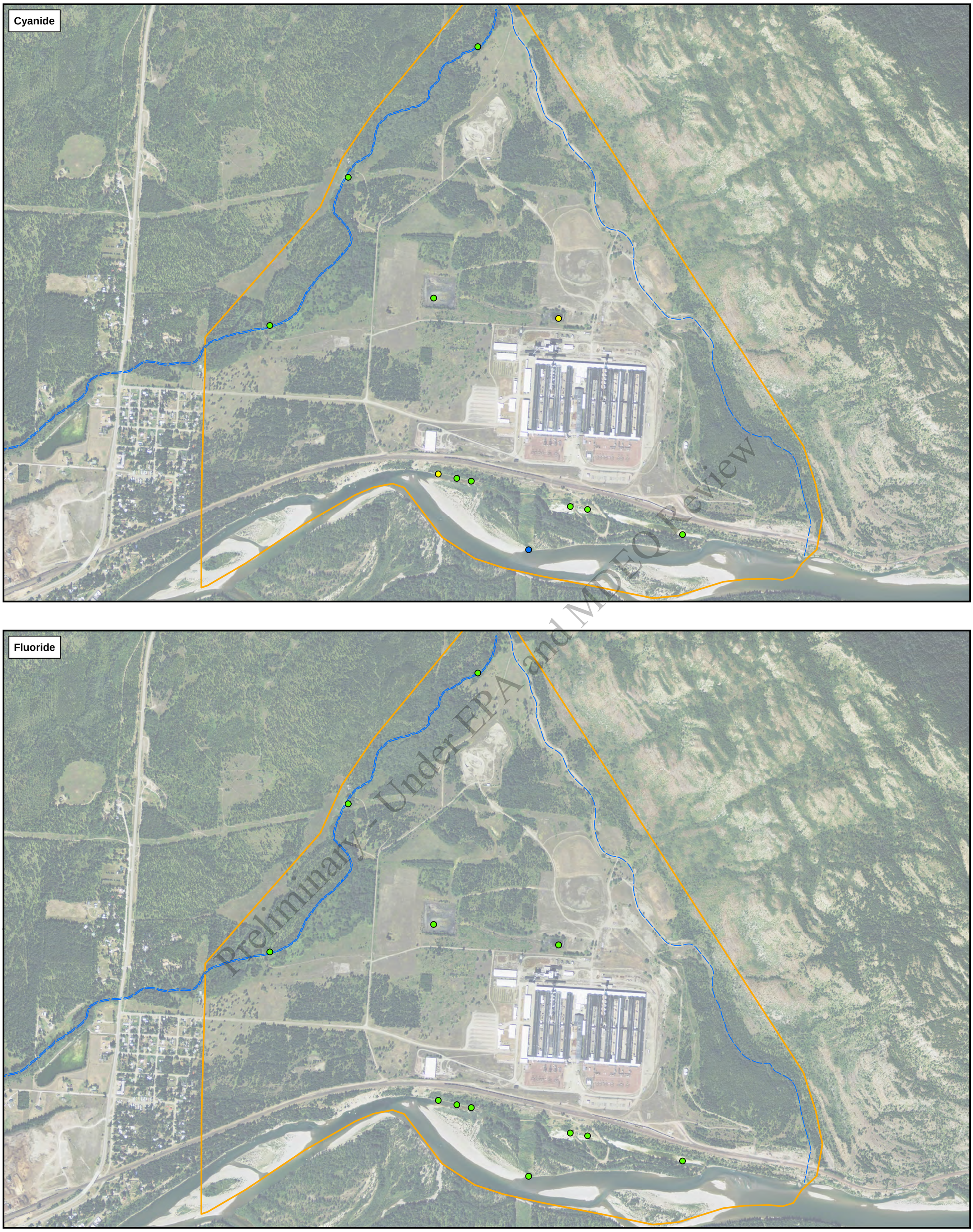
Preliminary - Under EPA and MDEQ Review

APPENDIX Z

Sediment Thematic Maps

1. Concentrations of Cyanide and Fluoride in Sediment
2. Concentrations of PAHs in Sediment
3. Concentrations of Selected Metals in Sediment

Preliminary - Under EPA and MDEQ Review



Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Cyanide	2.3	15
Fluoride	310	4700

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
mg/kg – Milligrams/Kilograms

N

500 0 500 1,000 Feet

Title:

CONCENTRATIONS OF CYANIDE AND FLUORIDE IN SEDIMENT

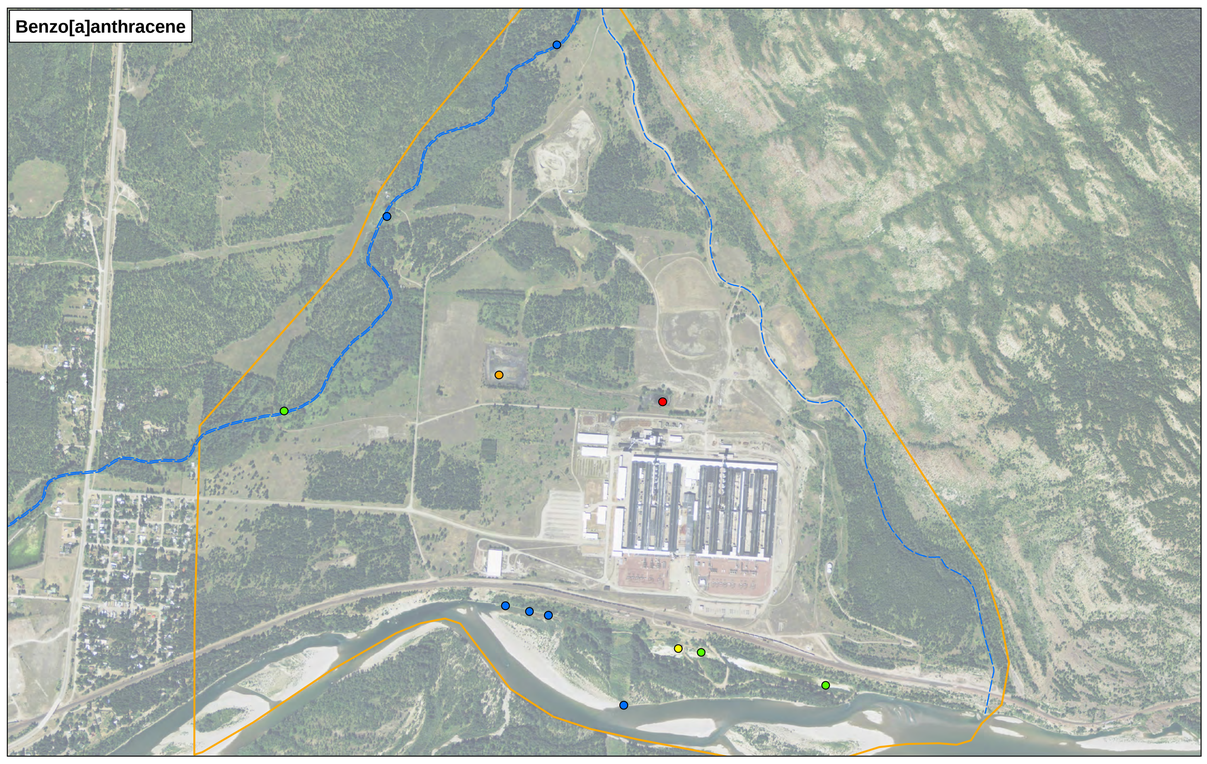
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COLUMBIA FALLS, MONTANA

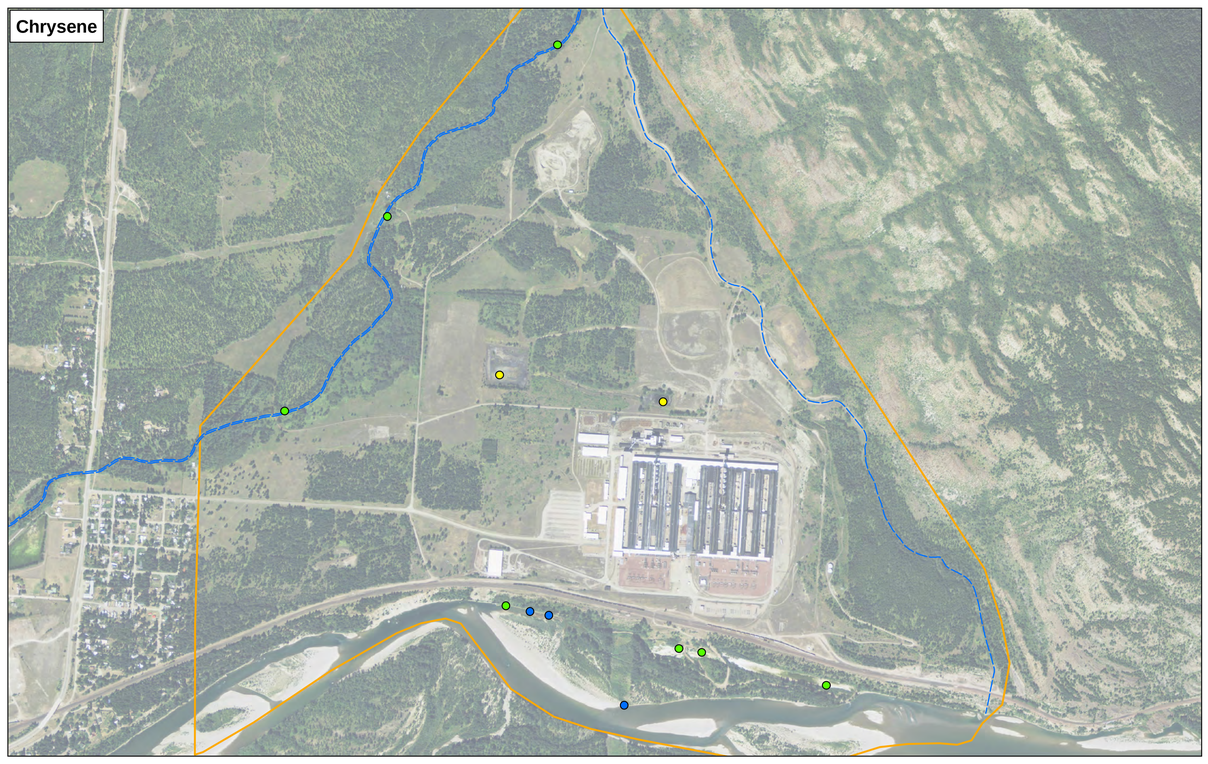
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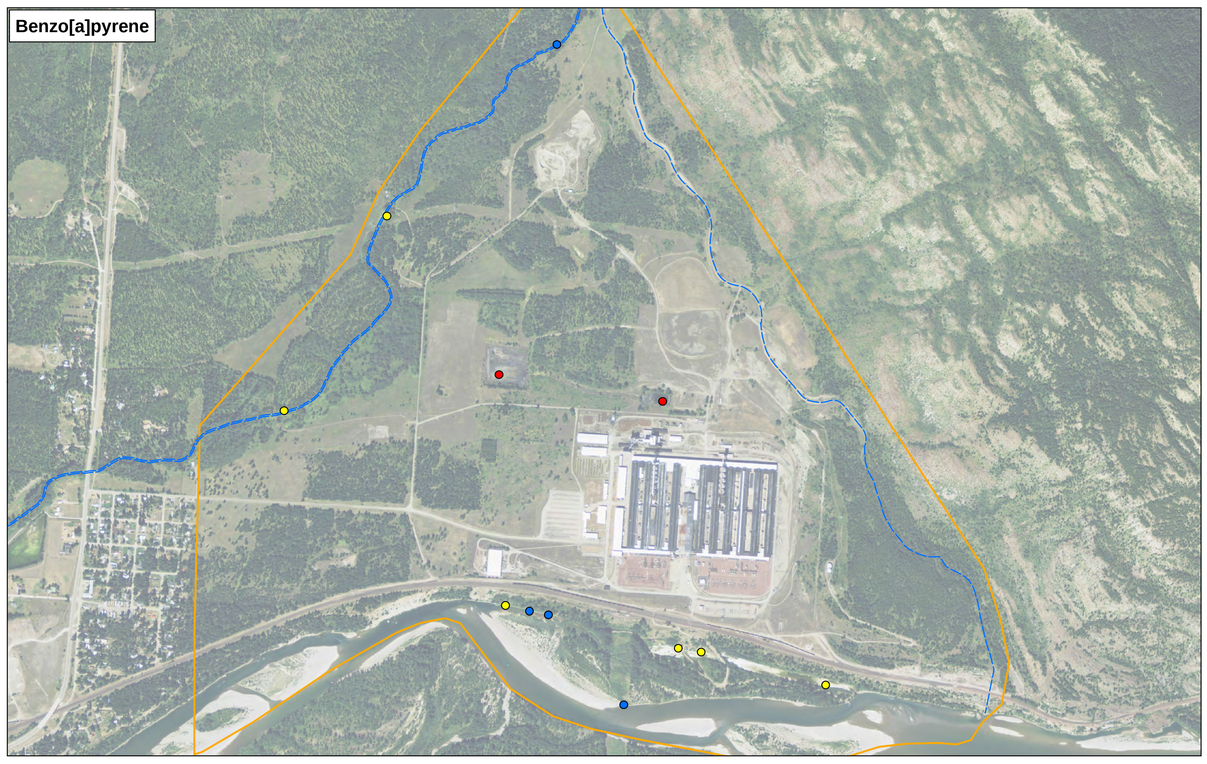
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Environmental Consulting & Management

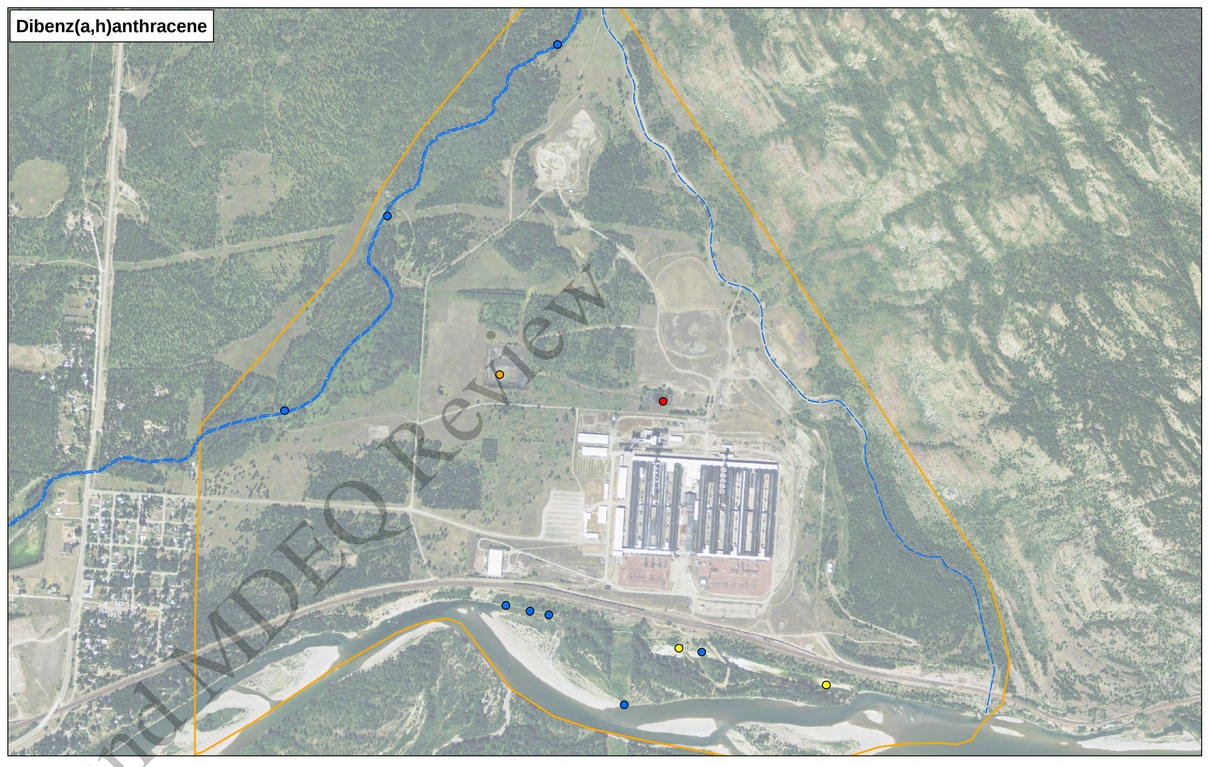
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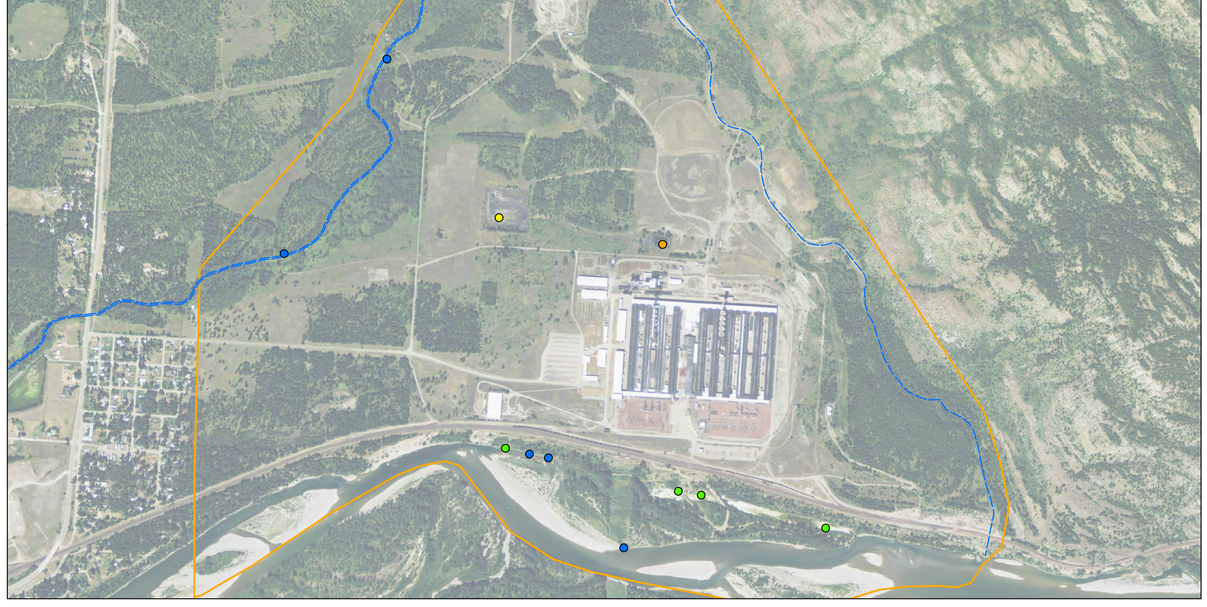
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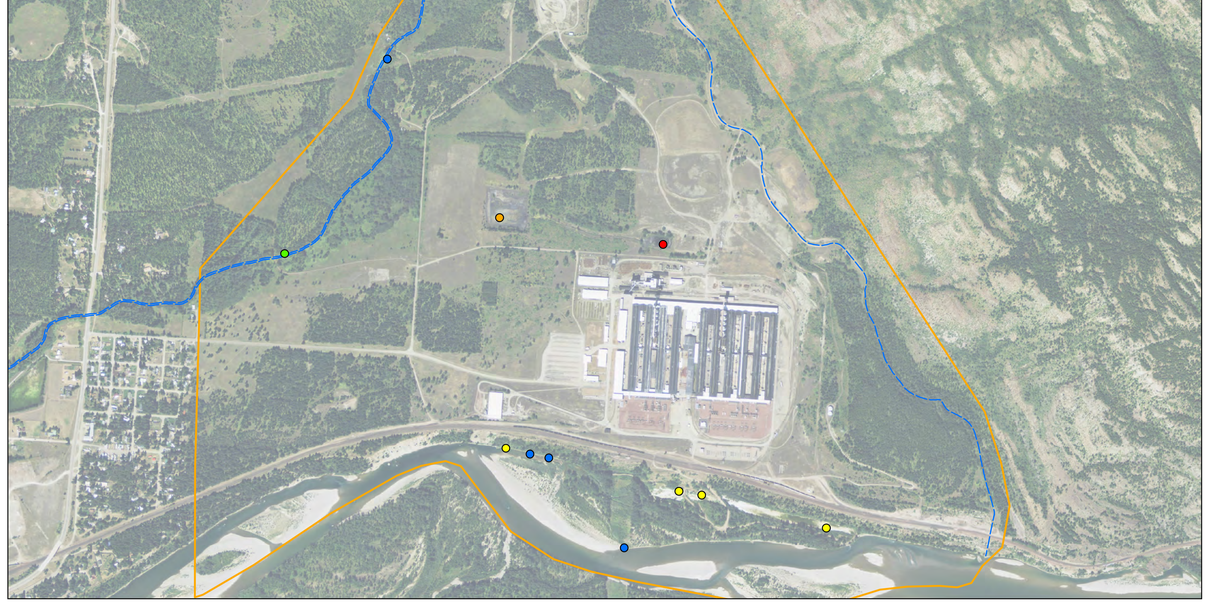












Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Analyte	Residential* mg/kg	Industrial** mg/kg
Benzo[a]anthracene	0.16	2.9
Benzo[a]pyrene	0.016	0.29
Benzo[B]fluoranthene	0.16	2.9
Benzo[k]fluoranthene	1.6	29
Chrysene	16	290
Dibenz(a,h)anthracene	0.016	0.29
Fluoranthene	240	3000
Indeno[1,2,3-cd]pyrene	0.16	2.9

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
PAH – Polycyclic Aromatic Hydrocarbon
mg/kg – Milligrams/Kilograms

N

875 0 875 1,750 Feet

Title:

CONCENTRATIONS OF SELECTED PAHS IN SEDIMENT

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

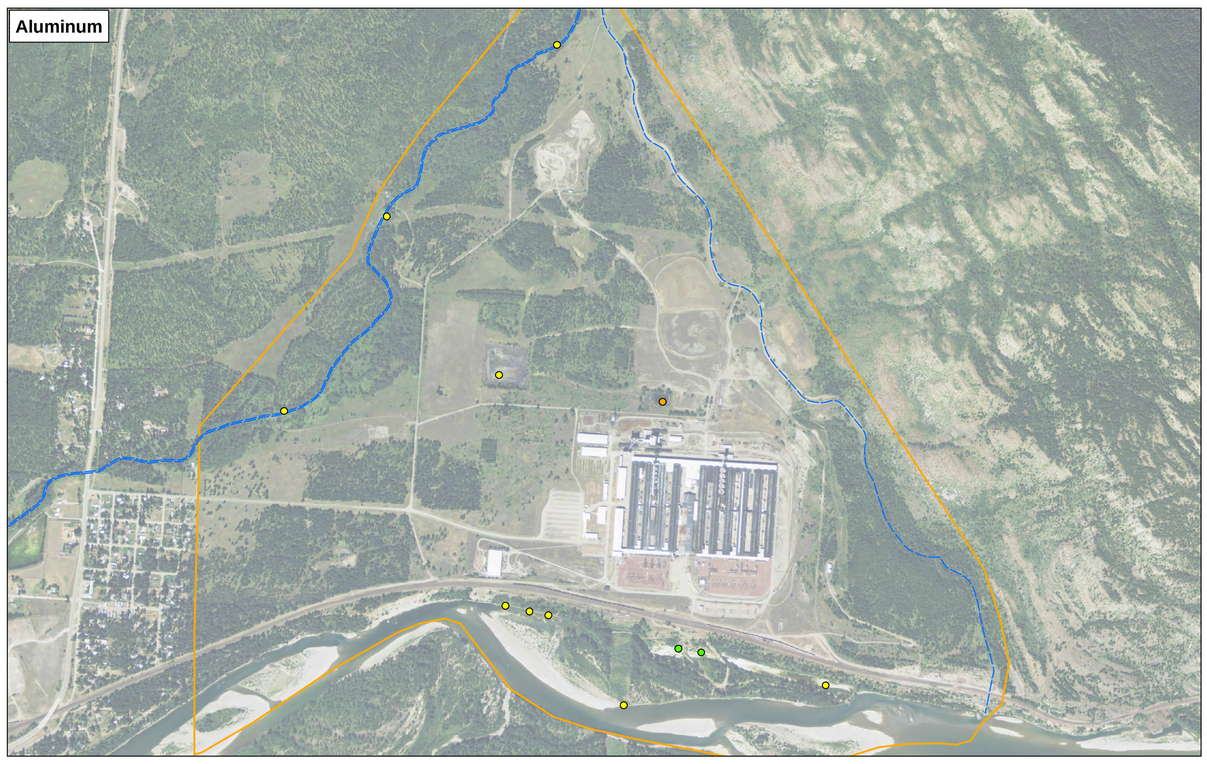
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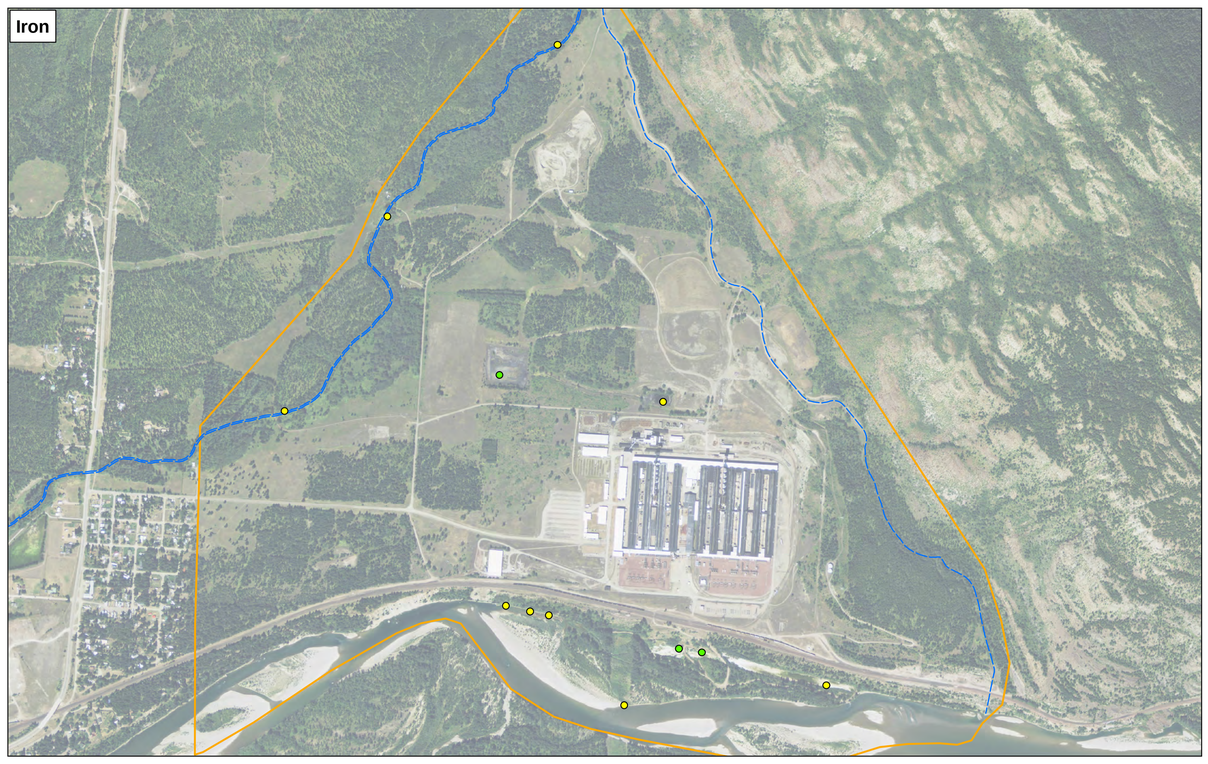
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Environmental Consulting & Management

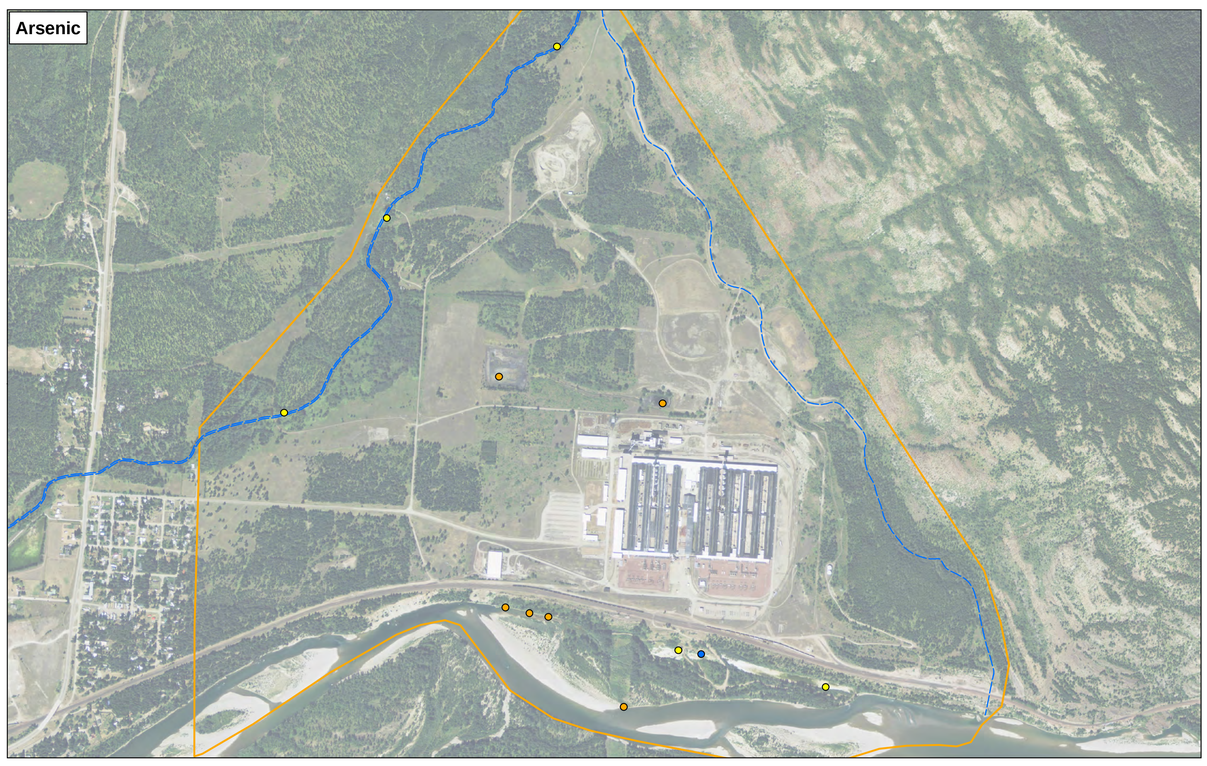
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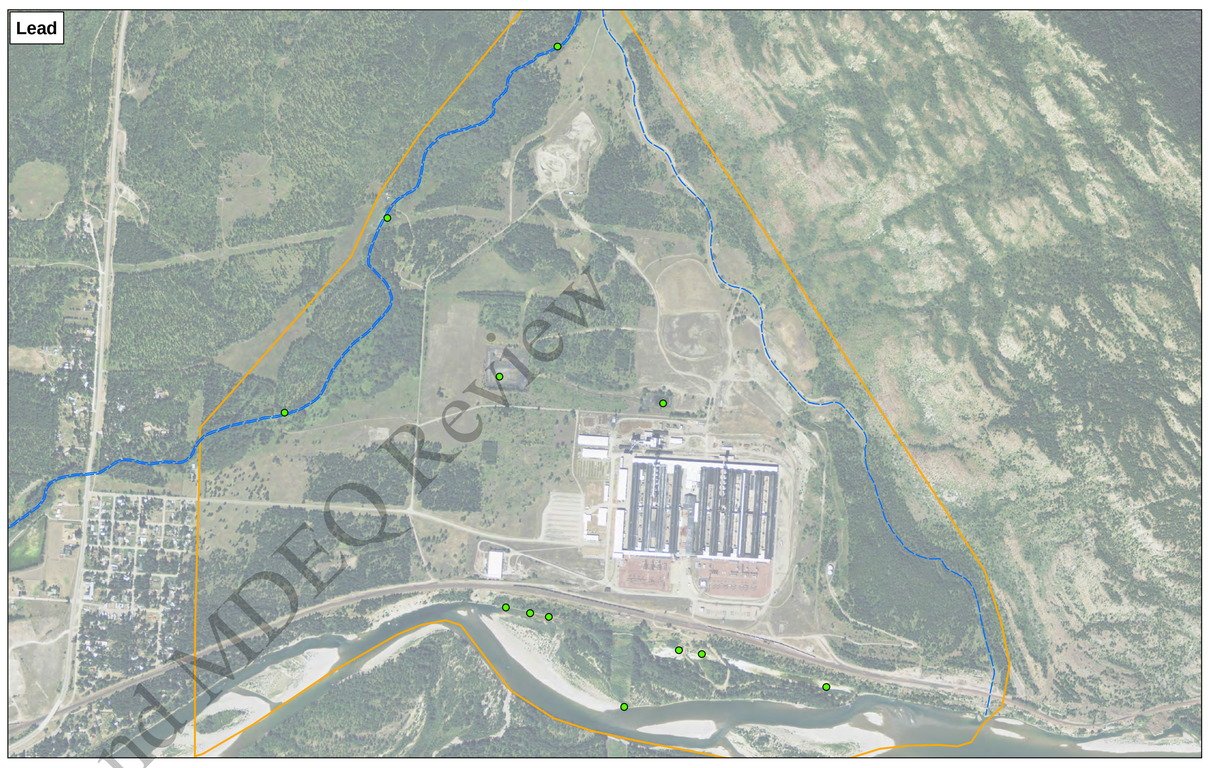
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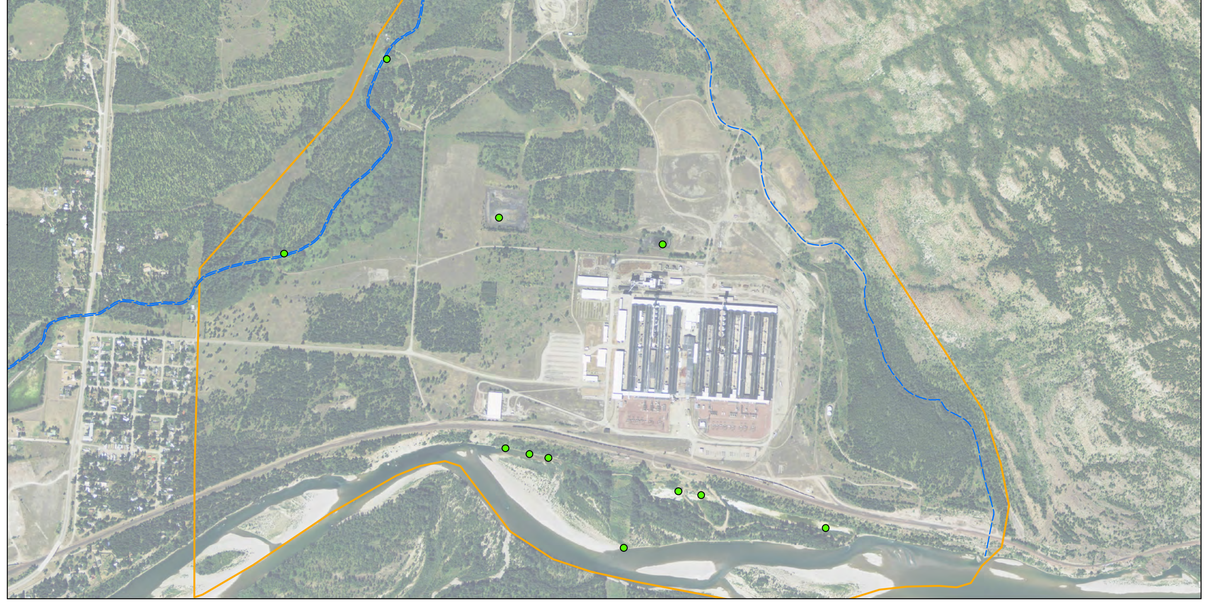
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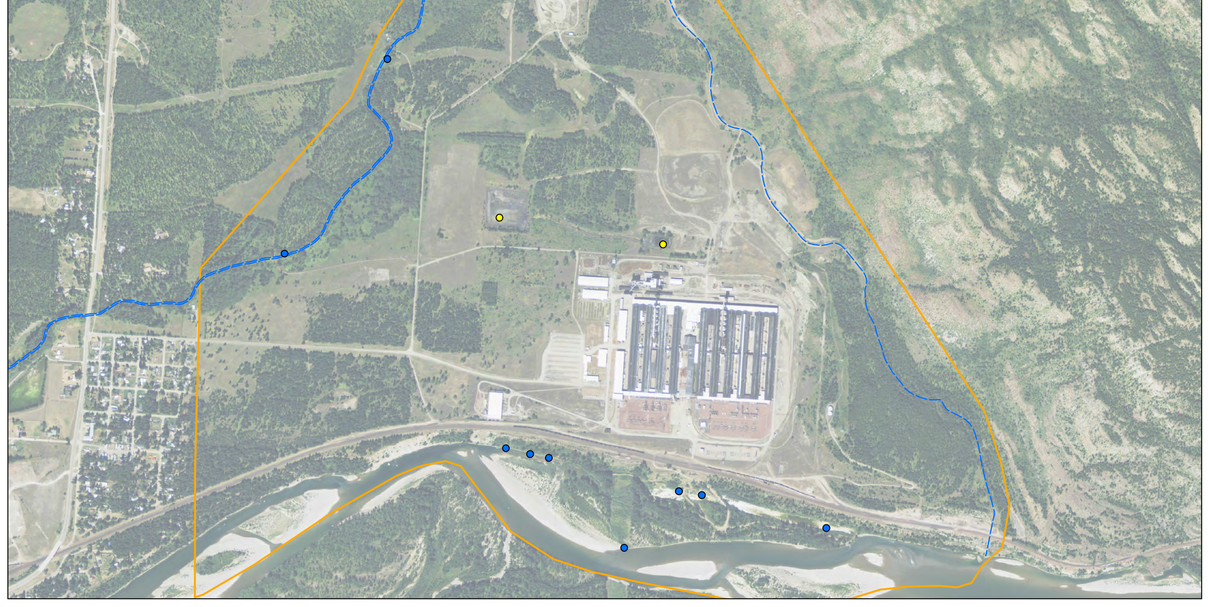












Preliminary - Under EPA and MDEQ Review

Concentration Legend

- Analyte Not Detected
- Below EPA Residential RSL
- Exceeds EPA Residential RSL
- Exceeds EPA Industrial RSL
- Result is 10x or Greater than Industrial RSL

Compound	Residential* mg/kg	Industrial** mg/kg
Aluminum	7700	110000
Arsenic	0.68	3
Cobalt	2.3	35
Copper	310	4700
Iron	5500	82000
Lead	400	800
Manganese	180	2600
Thallium	0.078	1.2

Notes

* – EPA Residential RSLs
** – EPA Industrial RSLs
EPA – Environmental Protection Agency
RSL – Regional Screening Levels
mg/kg – Milligrams/Kilograms

N

875 0 875 1,750 Feet

Title:
CONCENTRATIONS OF SELECTED METALS IN SEDIMENT
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 23FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.51	

PLATE Z3

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APPENDIX AA

Investigation Derived Waste Manifests

Preliminary - Under EPA and MDEQ Review

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No: 04172016

2. Page 1 of

3. Generator's Name and Mailing Address
COLUMBIA FALLS ALUMINUM COMPANY
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MT 59912

4. Generator's Phone (406) 892-8211

5. Transporter 1 Company Name: CLEAN HARBORS ENVIRONMENTAL SERVICES

6. US EPA ID Number: MAD053122250

A. State Transporter's ID

B. Transporter 1 Phone: 508-224-6633

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WMI GRAHAM ROAD LAND FILL
1820 S GRAHAM ROAD
MEDICAL LAKE, WA 99022

10. US EPA ID Number

E. State Facility's ID: SWD 53 - GRAHAM RD - 001

F. Facility's Phone: 509-244-0151

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY DOT	1	CM	21	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WMI MSW File # 1116 Medical Lake WA

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
		04 / 17 / 16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
WESLEY J SCOTT		04 / 17 / 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)

Preliminary - Under EPA and MDEQ Review

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NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of

GENERATOR

3. Generator's Name and Mailing Address COLUMBIA FALLS ALUMINUM COMPANY
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MT 59912

4. Generator's Phone (406) 892 8211

5. Transporter 1 Company Name: CLEAN HARBORS ENVIRONMENTAL

6. US EPA ID Number: MAD039322250

A. State Transporter's ID

B. Transporter 1 Phone: 509 724 7633

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: WMI GRAHAM ROAD LANDFILL

10. US EPA ID Number

E. State Facility's ID: SRHDSW-GRAHAM RD-001

F. Facility's Phone: 509-244-0151

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY DOT	1	CM	01	Y
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above: WMI PROFILE # 111635 WA

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Preliminary - Under EPA and MDEQ Review

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name | Signature | Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19.

Printed/Typed Name | Signature | Date: Month Day Year

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NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 08302016

2. Page 1 of

3. Generator's Name and Mailing Address
COLUMBIA FALLS ALUMINUM COMPANY
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MT 59912

4. Generator's Phone (406) 892 8211

5. Transporter 1 Company Name
CLEAN HARBORS ENVIROMENTAL SERVICES

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone (509) 721-9633

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WMI GRAHAM ROAD LANDFILL
18205 GRAHAM ROAD
MEDICAL LAKE, WA 99022

10. US EPA ID Number

E. State Facility's ID SRADSW-GRAHAM RD-001

F. Facility's Phone 509-244-0151

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY DOT	1	C.M.	C 20	
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
WMI PROFILE # 11635WA

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: STEVE WRIGHT | Signature | Date: Month 8 Day 30 Year 16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date: Month Day Year

NON-HAZARDOUS WASTE

GENERATOR

Preliminary - Under EPA and MDEQ Review

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NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 03120116

2. Page 1 of

3. Generator's Name and Mailing Address COLUMBIA FALLS ALUMINUM COMPANY
2000 ALUMINUM DRIVE
COLUMBIA FALLS MT 59912

4. Generator's Phone (406) 892 8211

5. Transporter 1 Company Name: CLEANHARBORS ENVIRONMENTAL SERVICES

6. US EPA ID Number: MAD03722250

A. State Transporter's ID

B. Transporter 1 Phone 509 724 9633

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WMI GRAHAM ROAD LANDFILL
14205 GRAHAM ROAD
MEDICAL LAKE, WA 99022

10. US EPA ID Number

E. State Facility's ID SRHDSW-GRAHAMRD-001

F. Facility's Phone 509 244 0151

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY DOT	1	CM	0	L
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WMI PROFILE # 111630 WA

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name | Signature | Date: Month 8 | Day 31 | Year 16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month | Day | Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date: Month | Day | Year

NON-HAZARDOUS WASTE

Preliminary - Under EPA and MDEQ Review

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NON-HAZARDOUS WASTE MANI

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 072916

2. Page 1 of

3. Generator's Name and Mailing Address
Columbia Falls Aluminum company
2000 Aluminum drive
Columbia Falls MT 59912

4. Generator's Phone (406) 892-8411

5. Transporter 1 Company Name
Inter Mountain Transfer

6. US EPA ID Number
MAD 072222450

A. State Transporter's ID

B. Transporter 1 Phone 509 235 5610

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
WMI Grassman Road Landfill
18205 Custom Road
Medical Lake, WA 99022

10. US EPA ID Number

E. State Facility's ID
WADSW-Grassman Rd-0001

F. Facility's Phone
509 244 0151

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Material not Regulated by DOT	1	CM	15	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WMI Profile # 111695 WA
CAN # PT2273

Preliminary - Under EPA and MDEQ Review

NON-HAZARDOUS WASTE

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
Tim Wiley		9	27	16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Kendal Tande		9	27	16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year

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NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

GENERATOR

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No. 09216	2. Page 1 of
3. Generator's Name and Mailing Address			
4. Generator's Phone ( )			
5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID	
		B. Transporter 1 Phone	
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID	
		D. Transporter 2 Phone	
9. Designated Facility Name and Site Address	10. US EPA ID Number	E. State Facility's ID	
		F. Facility's Phone	

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	1	T	12	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above	H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

111635 WA

Preliminary - Under EPA and MDEQ Review

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials		
Printed/Typed Name: Kendal Tracy	Signature	Date (Month / Day / Year): 9 / 28 / 16
18. Transporter 2 Acknowledgement of Receipt of Materials		
Printed/Typed Name	Signature	Date (Month / Day / Year): / /

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

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NON-HAZARDOUS WASTE MANIFEST

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NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 09216

2. Page 1 of

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

5. Transporter 1 Company Name

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL Not Regulated by DOT	1	T	12	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

111635 WA

Preliminary - Under EPA and MDEQ Review

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
Randal Travis		9 / 28 / 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

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NON-HAZARDOUS WASTE MANIFEST

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NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 092916

2. Page 1 of

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

5. Transporter 1 Company Name

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	1		12	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Bin # PT4089

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: STEVE WRIGHT

Signature

Date: Month 9 Day 29 Year 16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

Date: Month Day Year

NON-HAZARDOUS WASTE

Preliminary - Under EPA and MDEQ Review

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NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

GENERATOR

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No. 093016	2. Page 1 of
3. Generator's Name and Mailing Address Columbia Falls Aluminum Company 4. Generator's Phone ( )			
5. Transporter 1 Company Name Clean Harbors Environmental Services	6. US EPA ID Number MAD 981 [illegible] 750	A. State Transporter's ID B. Transporter 1 Phone	
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID D. Transporter 2 Phone	
9. Designated Facility Name and Site Address WMI Grassy Road Landfill Grassy Road Medical Lake, WA 99022	10. US EPA ID Number	E. State Facility's ID F. Facility's Phone	

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY DOT	1	CM	12	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above	H. Handling Codes for Wastes Listed Above
WMI Profile [illegible] WA	

15. Special Handling Instructions and Additional Information

WMI Profile [illegible] WA

Bill PT 1410

Preliminary - Under EPA and MDEQ Review

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date: Month	Day	Year
Steve Wright	[signature]	9	30	16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials		Date: Month	Day	Year
Printed/Typed Name: Randal Trask	Signature: [signature]	9	30	16
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed/Typed Name	Signature			

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date: Month	Day	Year

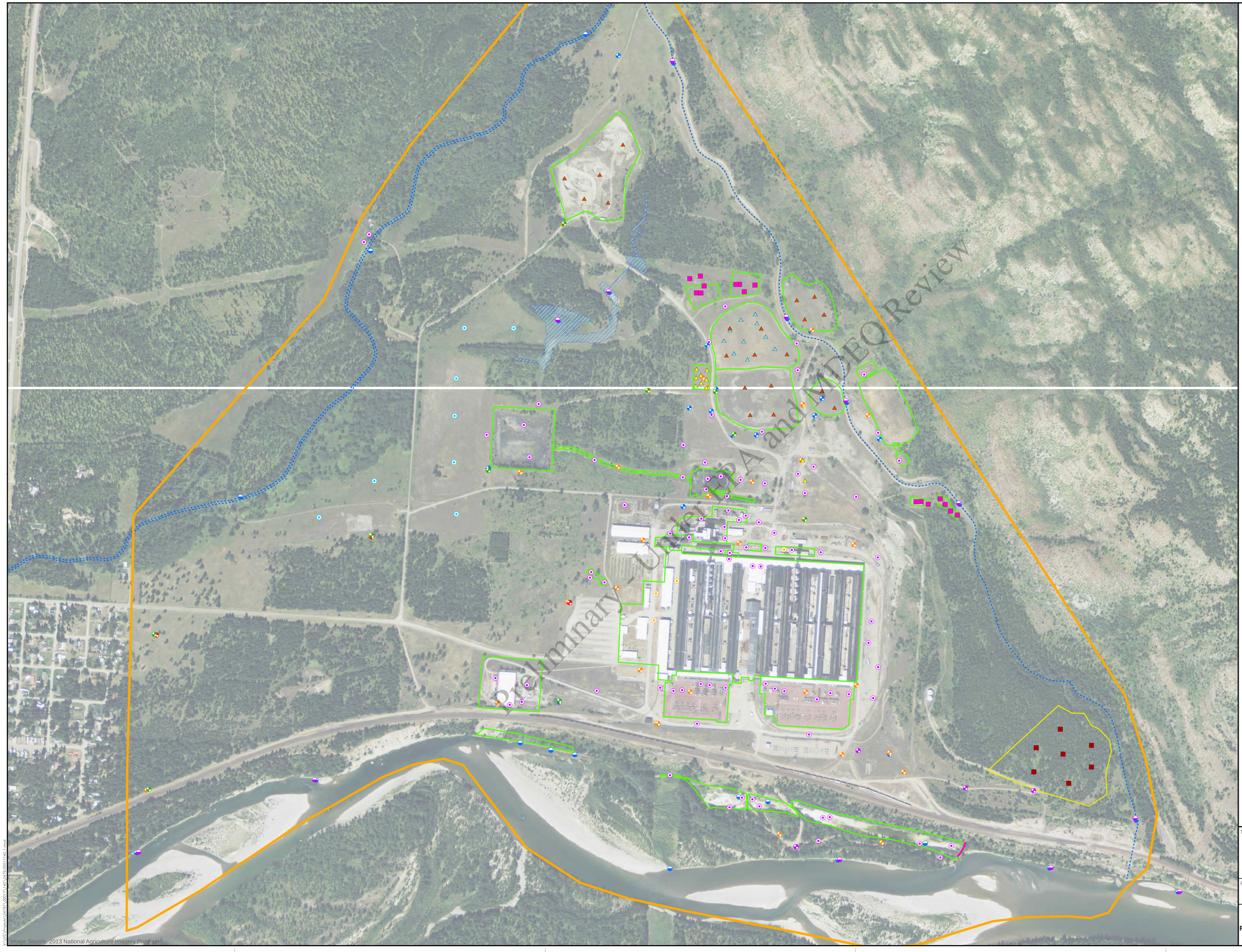
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PLATES

Preliminary - Under EPA and MDEQ Review

1. Summary of Phase I Site Characterization Investigation Locations
2. Soil Boring Locations and Designations
3. Operational Area Decision Unit Locations and Designations
4. Monitoring Well Locations, Designations, and Screened Intervals
5. Surface Water and Sediment Sampling Locations and Designations
6. Hydrogeologic Cross Section Transects
7. Hydrogeologic Cross Section A-A’
8. Hydrogeologic Cross Section B-B’
9. Hydrogeologic Cross Section C-C’
10. Hydrogeologic Cross Section D-D’
11. Potentiometric Surface Contour Map – August 30, 2016
12. Potentiometric Surface Contour Map – November 29, 2016
13. Grain Size Distribution in Soil and Sediment Samples
14. Results and Lead Bulk and Sieved Soil Sampling Comparison
15. Concentrations of Cyanide in Groundwater – September 2016
16. Concentrations of Fluoride in Groundwater – September 2016



N

Legend

- Soil Gas Passive Sample Locations
- Soil Gas Locations Screened Using Soil Gas Probe
- Soil Gas Locations Screened from Existing Landfill Vent
- Existing Monitoring Well Locations Screened Below Upper Hydrogeologic Unit
- Existing Monitoring Well Locations Screened in Upper Hydrogeologic Unit
- Existing Monitoring Well Locations Screened Below Upper Hydrogeologic Unit
- Phase 1 Monitoring Well Locations Screened Below Upper Hydrogeologic Unit
- Former Production Well Locations
- Surface Water / Sediment Sample Locations
- Soil Samples Collected at Proposed Sediment Locations
- Soil Boring Locations
- Background Soil Boring Locations
- Drainage Structure Soil Sample Locations
- Borrow Pit Test Pit Sample Locations
- Asbestos Test Pit Locations
- Extent of Bank Stabilization Sheet Piling
- Site Features
- Site Boundary
- Creek Features
- Borrow Pit Area
- Northern Surface Water Feature Extent

400 0 400
Feet

Image Source: 2013 National Agriculture Imagery Program

Title:

PHASE I SITE CHARACTERIZATION INVESTIGATION LOCATIONS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

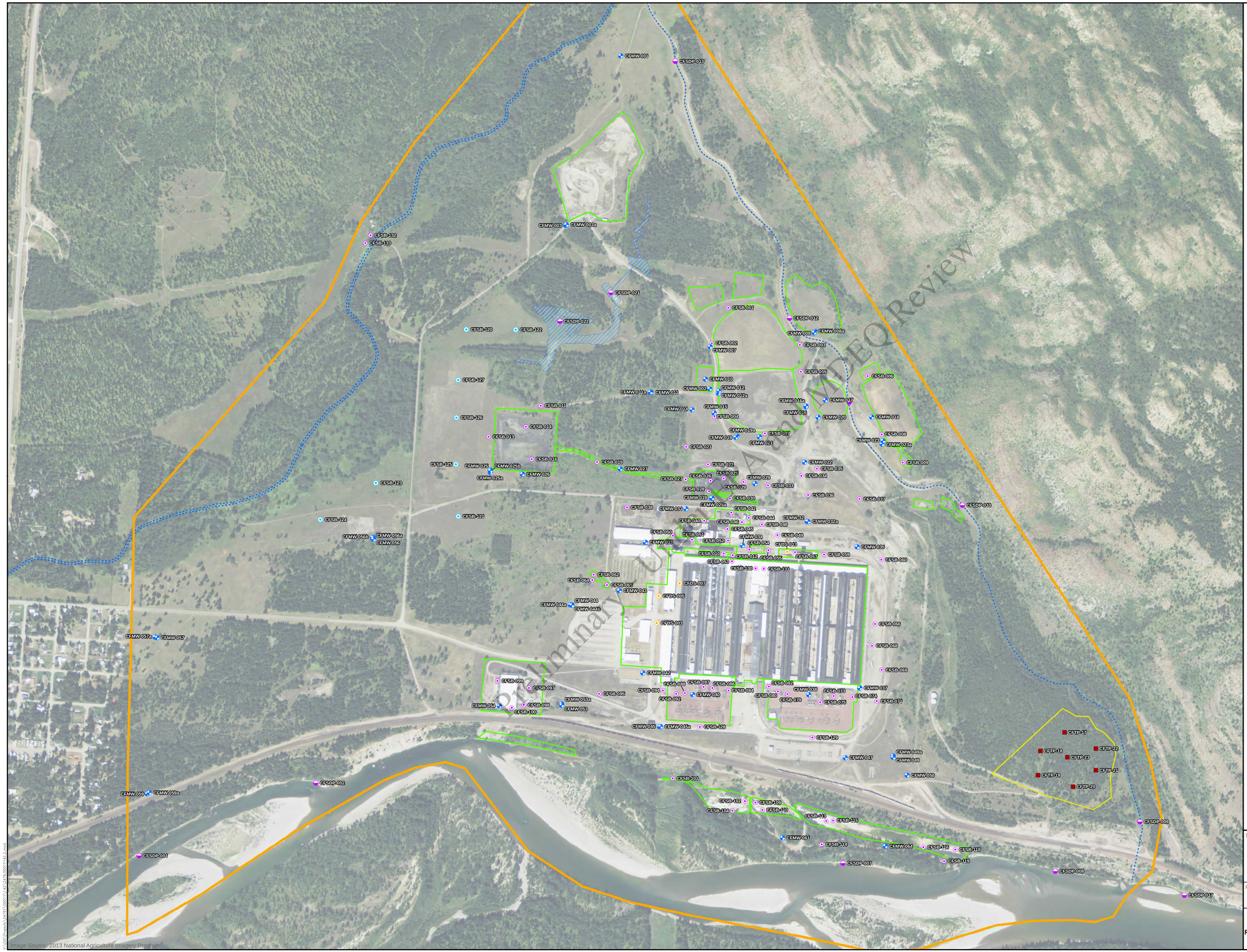
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.1	

PLATE
1

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Title:

FINAL PHASE I SITE CHARACTERIZATION SOIL SAMPLING LOCATIONS AND DESIGNATIONS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.2	

PLATE 2

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Preliminary - Under EPA and MDEQ Review

N

Legend

- Operational Grid Area Samples
- Site Boundary
- Creek Features
- Operational Grid

150 0 150
Feet

Title:

INCREMENTAL SOIL SAMPLE LOCATIONS WITHIN OPERATIONAL GRID AREA

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

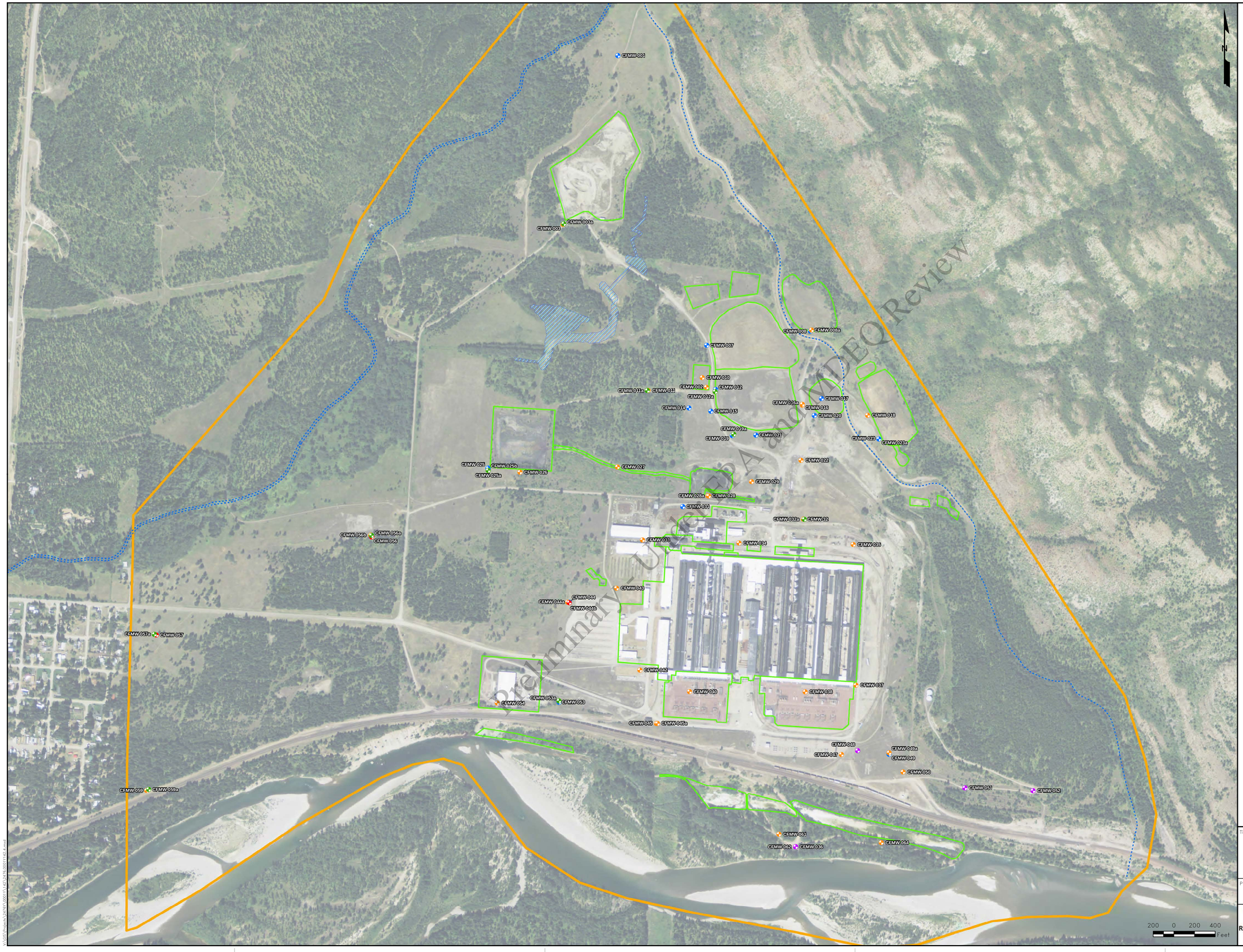
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.3.mxd	

PLATE
3

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Legend

- Existing Monitoring Well Locations Screened Below Upper Hydrogeologic Unit
- Existing Monitoring Well Locations Screened in Upper Hydrogeologic Unit
- Existing Monitoring Well Locations Screened Below Upper Hydrogeologic Unit
- Phase 1 Monitoring Well Locations Screened Below Upper Hydrogeologic Unit
- Former Production Well Locations
- Site Features
- Site Boundary
- Creek Features
- Northern Surface Water Feature Extent

Well Location ID	Boring Depth (Ft-Bls)	Screen Interval (Ft-Bls)
CFMW-001	152.5	132.5 – 152.5
CFMW-002	80	70 – 80
CFMW-003	54	44 – 54
CFMW-003a	245.5	190 – 200
CFMW-007	160	91 – 102
CFMW-008	38.5	Open Bottom
CFMW-008a	300	88 – 98
CFMW-010	86	76 – 86
CFMW-011	50	40 – 50
CFMW-011a	300	156 – 166
CFMW-012	90	70 – 85
CFMW-012a	254	200 – 210
CFMW-014	92	72 – 87
CFMW-015	94	72 – 87
CFMW-016	95	85 – 95
CFMW-016a	300	121 – 126
CFMW-017	141	137 – 141
CFMW-018	125	112 – 122
CFMW-019	96	78 – 88
CFMW-019a	300	210 – 220
CFMW-020	130	113 – 118
CFMW-021	90	70 – 85
CFMW-022	85	70 – 80
CFMW-023	144.5	137.5 – 143.25
CFMW-023a	196	NA
CFMW-025	24.5	9.5 – 24.5
CFMW-025a	300	85 – 95
CFMW-025b	60	45 – 60
CFMW-026	50	35 – 45
CFMW-027	45	35 – 45
CFMW-028	60	50 – 60
CFMW-028a	300	110 – 120
CFMW-029	76	66 – 76
CFMW-031	50	35 – 50
CFMW-032	55	45 – 55
CFMW-032a	300	195 – 205
CFMW-033	60	50 – 60
CFMW-034	60	50 – 60
CFMW-035	70	60 – 70
CFMW-037	100	90 – 100
CFMW-038	105	95 – 105
CFMW-040	90	80 – 90
CFMW-042	60	50 – 60
CFMW-043	60	50 – 60
CFMW-044	53	Open Bottom
CFMW-044a	300	100 – 110
CFMW-044b	>200	Open Bottom
CFMW-045	96	86 – 96
CFMW-045a	300	150 – 160
CFMW-047	120	110 – 120
CFMW-049	113	100 – 111
CFMW-049a	30	138 – 148
CFMW-050	120	110 – 120
CFMW-053	77	47 – 77
CFMW-053a	300	150 – 160
CFMW-054	85	75 – 85
CFMW-056	181.08	Open Bottom
CFMW-056a	294	125 – 135
CFMW-056b	50	40 – 50
CFMW-057	185.75	NA
CFMW-057a	300	128 – 138
CFMW-059	90	80 – 90
CFMW-059a	300	158 – 168
CFMW-061	25	13 – 23
CFMW-064	30	20 – 30

Notes

Ft-Bls – Feet Below Land Surface
NA – Information About Screened Interval is Not Available

Title:

WELL SCREEN INTERVALS AND BORING DEPTHS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

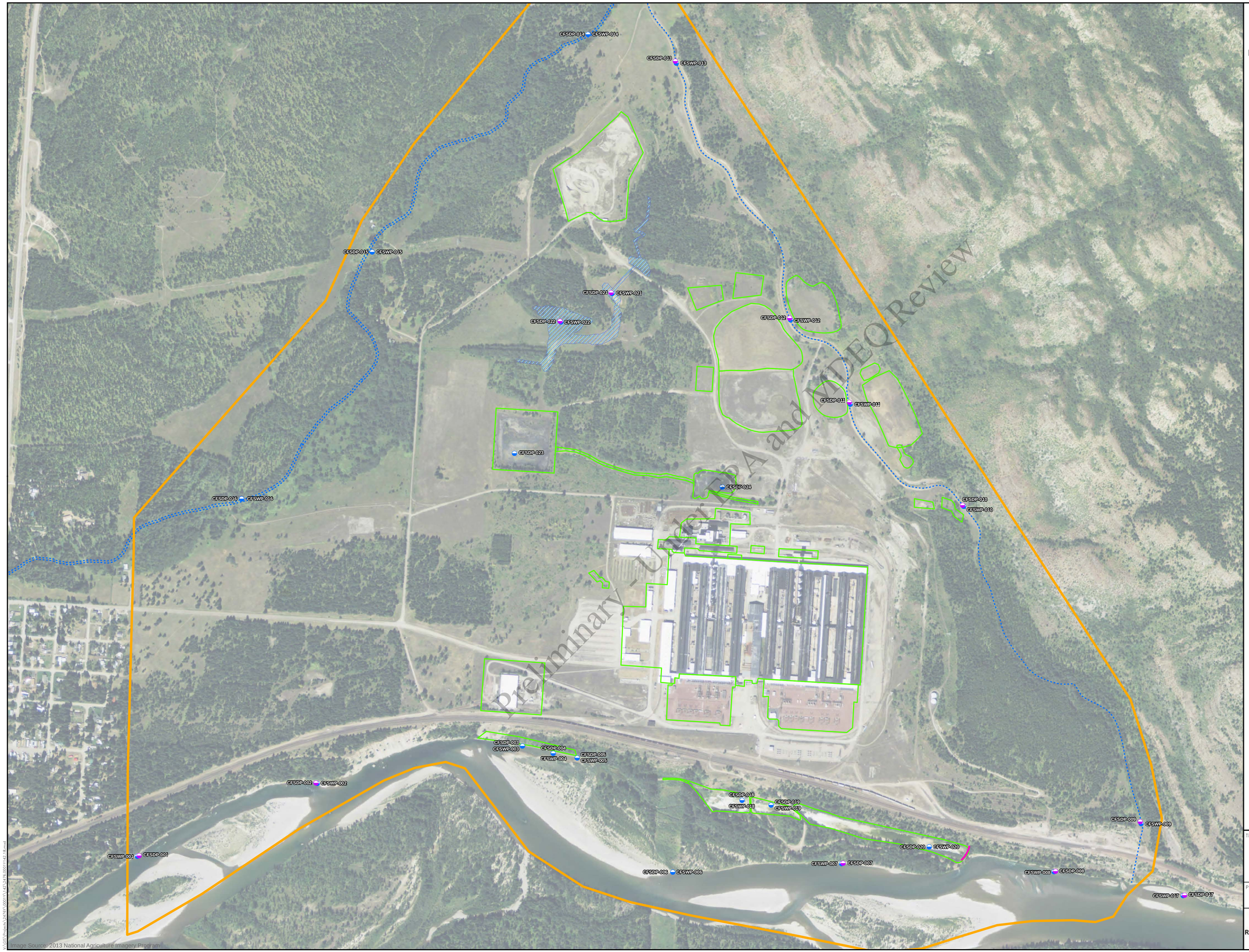
Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	PLATE 4
Prepared by: M.R.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.4.mxd		

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N

Legend

- Surface Water / Sediment Sample Locations
- Soil Samples Collected at Proposed Sediment Locations
- Extent of Bank Stabilization Sheet Piling
- Site Features
- Site Boundary
- Creek Features
- Northern Surface Water Feature Extent

400 0 400
Feet

Title:

FINAL PHASE 1 SITE CHARACTERIZATION SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS AND DESIGNATIONS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

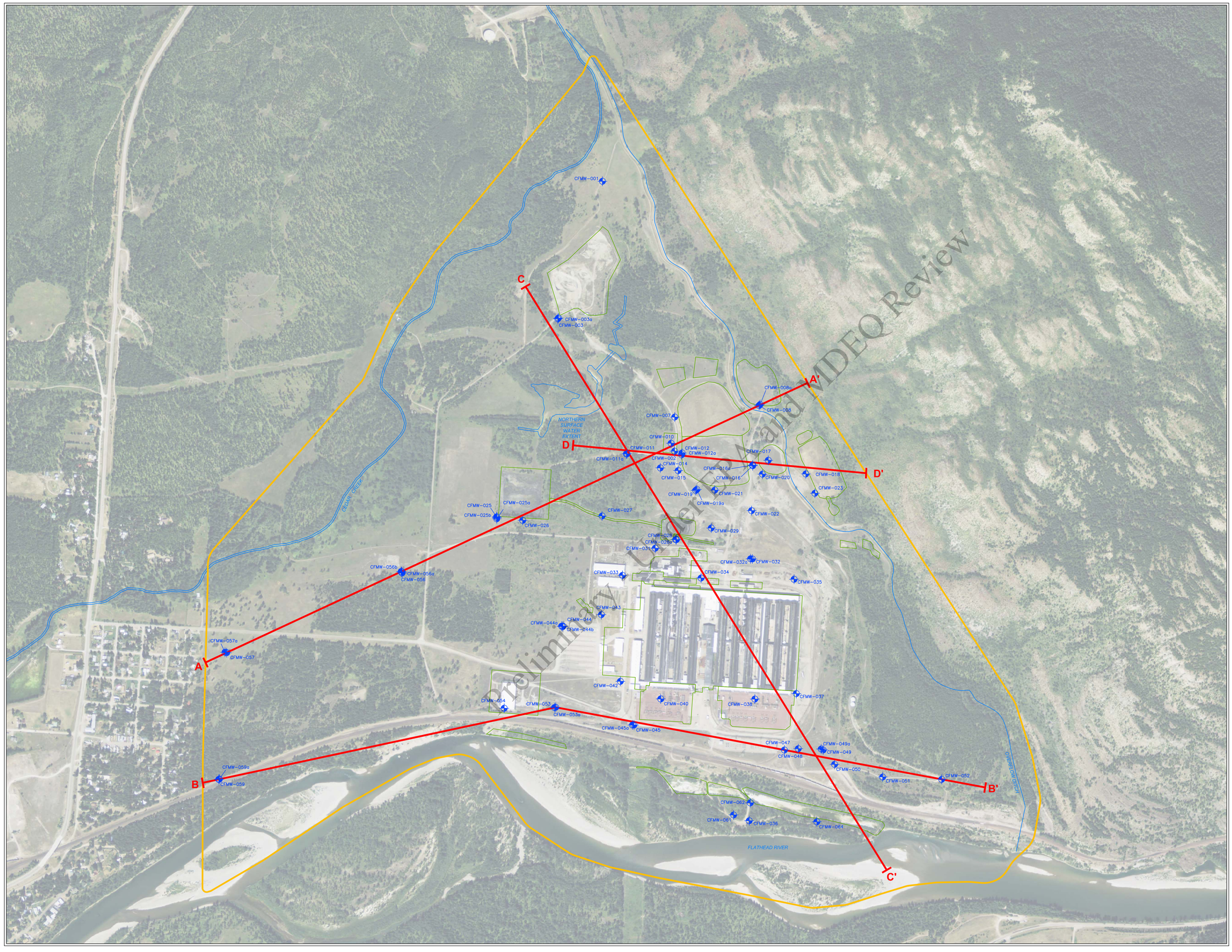
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.18	

PLATE 5

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N

LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL
- A — TRANSECT LINE

500' 0 500'

Title:

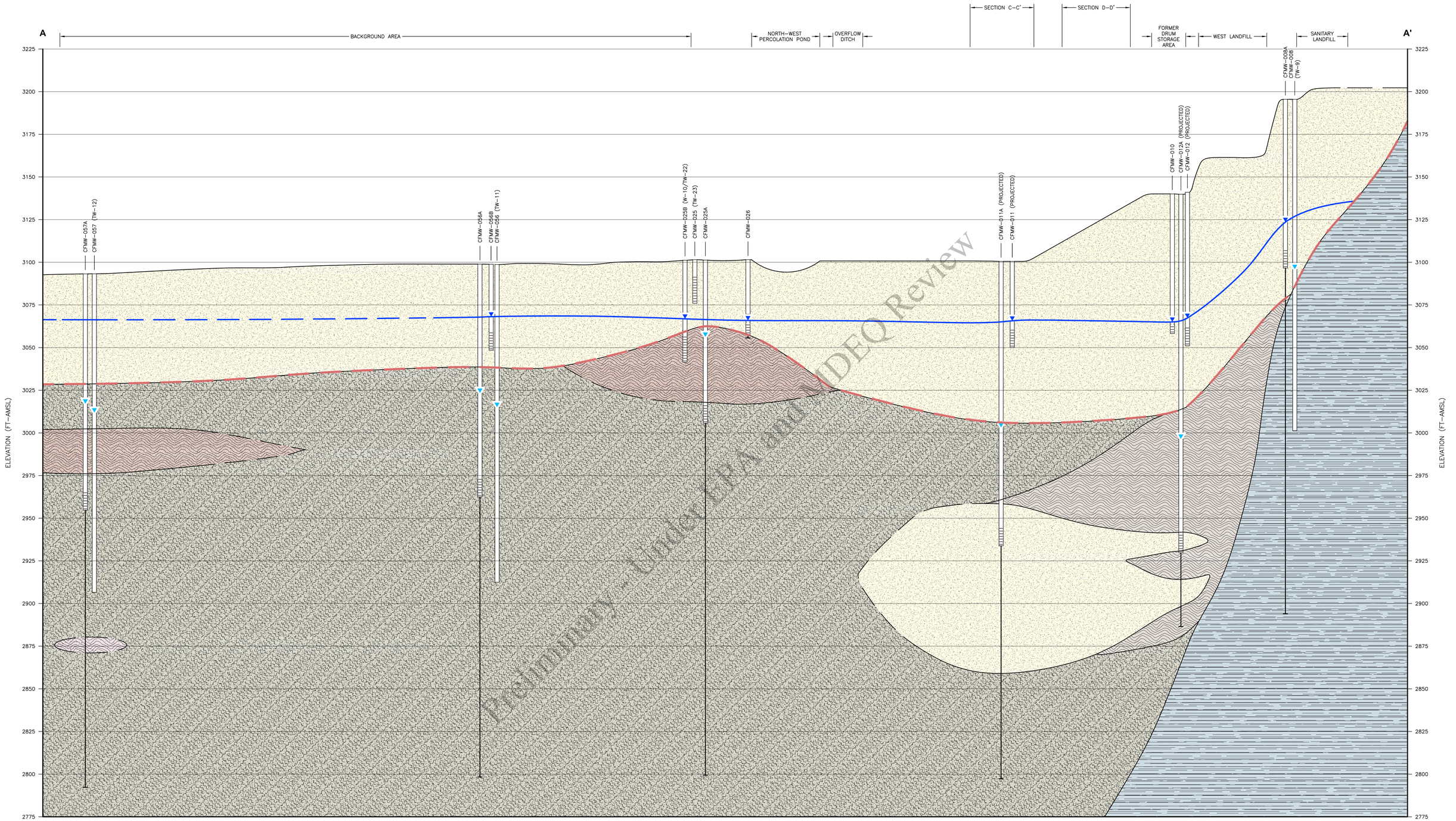
GENERALIZED HYDROGEOLIGIC CROSS-SECTION TRANSECTS

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 10NOV16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	6
File: 2476.0001Y142.01.DWG		

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Preliminary - Under EPA and VDEQ Review

LEGEND

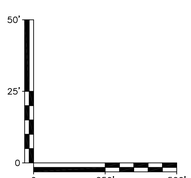
- FINE TO COARSE SAND WITH VARYING AMOUNTS OF GRAVEL AND SILT
- PRIMARILY SILT
- PRIMARILY CLAY WITH SOME SILT AND VARYING AMOUNTS OF SANDS AND GRAVELS
- FINE TO COARSE SAND AND SILT WITH VARYING AMOUNTS OF GRAVEL AND CLAY
- BEDROCK
- POTENTIOMETRIC HEAD GROUNDWATER ELEVATION
- MONITORING WELL GROUNDWATER SCREENED IN THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- MONITORING WELL GROUNDWATER SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- INFERRED BASE OF UPPER HYDROGEOLOGIC UNIT

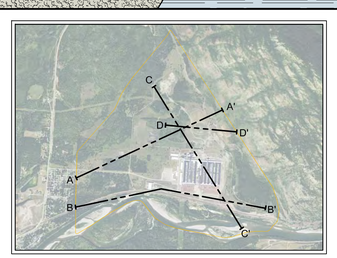
NOTES

1. POTENTIOMETRIC HEAD GROUNDWATER ELEVATIONS ARE BASED ON AUGUST 30, 2016 GAUGING DATA.
2. HISTORIC WELL LOGS FOR MONITORING WELLS CFMW-008 (TW-9), CFMW-057 (TW-12) AND CFMW-056 (TW-11) DID NOT PROVIDE WELL SCREEN INFORMATION.

GEOLOGIC CROSS SECTION A-A'

HORIZONTAL SCALE: 1" = 250'
VERTICAL SCALE: 1" = 25'
VERTICAL EXAGGERATION = 10X





Title:

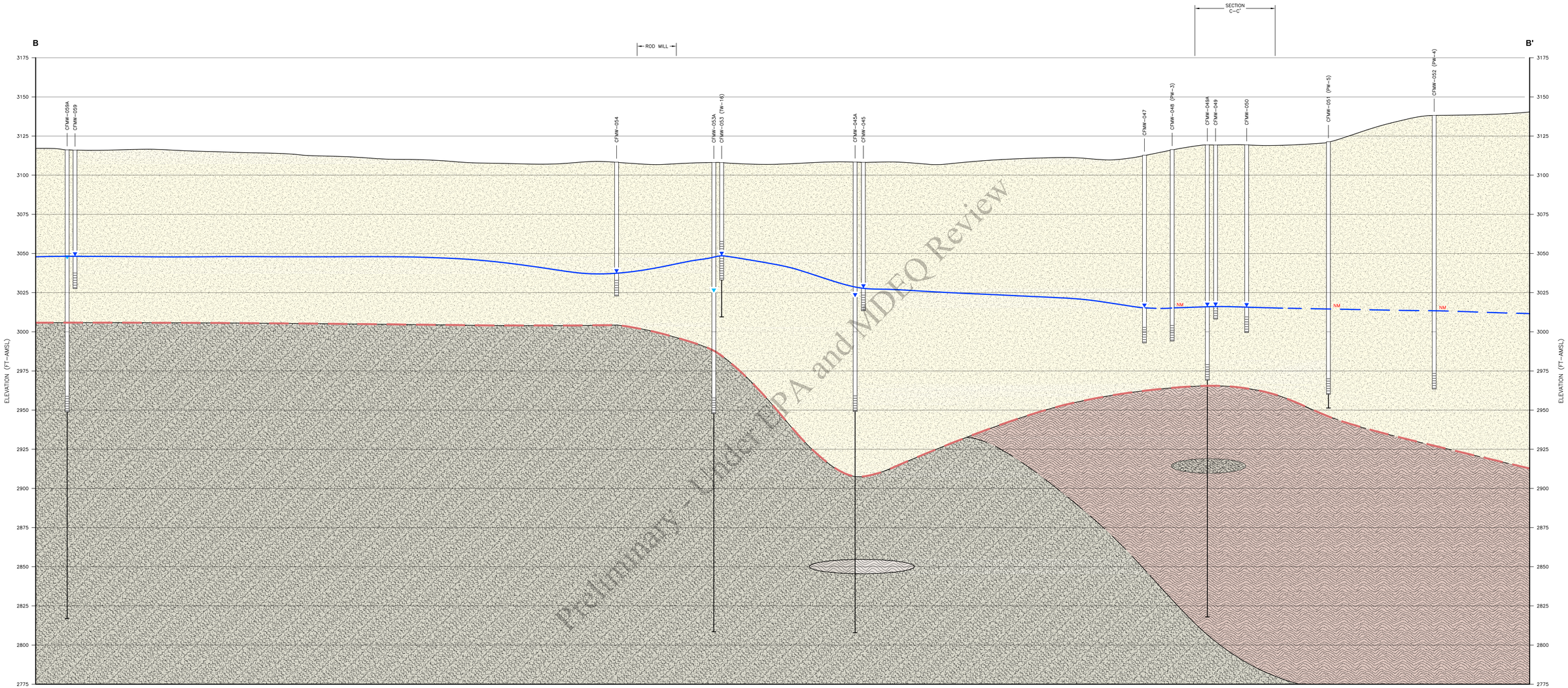
GENERALIZED HYDROGEOLOGIC CROSS-SECTION A-A'

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 08AUG16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	7
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.01.DWG		

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Preliminary – Under EPA and MDEQ Review

LEGEND

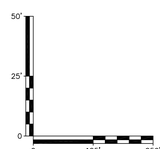
- FINE TO COARSE SAND WITH VARYING AMOUNTS OF GRAVEL AND SILT
- PRIMARILY CLAY WITH SOME SILT AND VARYING AMOUNTS OF SANDS AND GRAVELS
- PRIMARILY SILT
- FINE TO COARSE SAND AND SILT WITH VARYING AMOUNTS OF GRAVEL AND CLAY
- POTENTIOMETRIC HEAD GROUNDWATER ELEVATION
- MONITORING WELL GROUNDWATER SCREENED IN THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- MONITORING WELL GROUNDWATER SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- INFERRED BASE OF UPPER HYDROGEOLOGIC UNIT

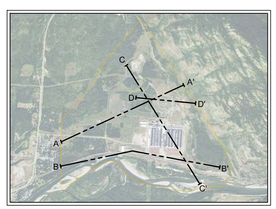
NOTE

POTENTIOMETRIC HEAD GROUNDWATER ELEVATIONS ARE BASED ON AUGUST 30, 2016 GAUGING DATA.

GEOLOGIC CROSS SECTION B–B'

HORIZONTAL SCALE: 1" = 125'
VERTICAL SCALE: 1" = 25'
VERTICAL EXAGGERATION = 5X





GENERALIZED HYDROGEOLOGIC CROSS-SECTION B-B'

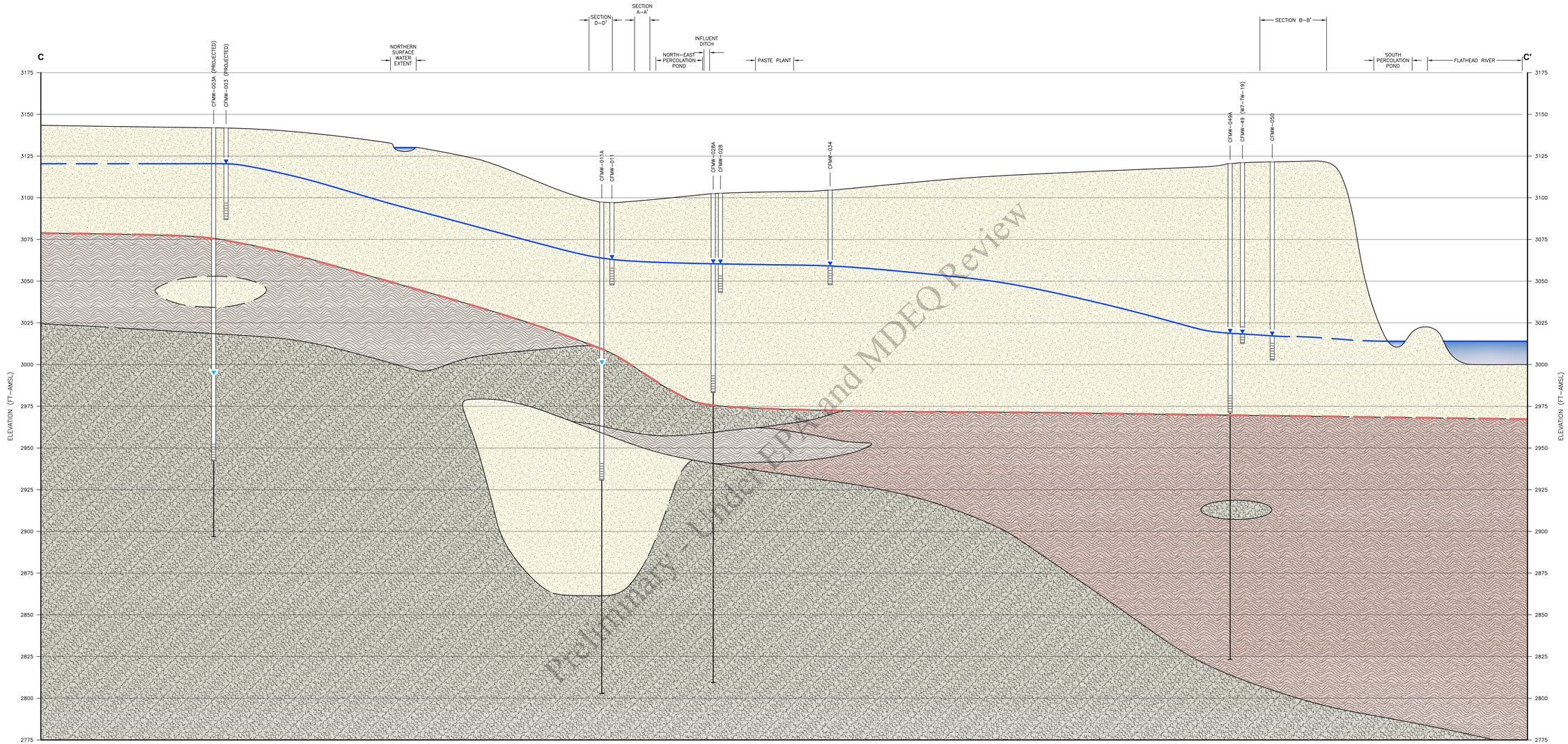
Title:

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 08AUG16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	8
File: 2476.0001Y142.01.DWG		

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LEGEND

- FINE TO COARSE SAND WITH VARYING AMOUNTS OF GRAVEL AND SILT
- PRIMARILY SILT
- FINE TO COARSE SAND AND SILT WITH VARYING AMOUNTS OF GRAVEL AND CLAY
- PRIMARILY CLAY WITH SOME SILT AND VARYING AMOUNTS OF SANDS AND GRAVELS
- POTENTIOMETRIC HEAD GROUNDWATER ELEVATION
- MONITORING WELL GROUNDWATER SCREENED IN THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- MONITORING WELL GROUNDWATER SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- INFERRED BASE OF UPPER HYDROGEOLOGIC UNIT

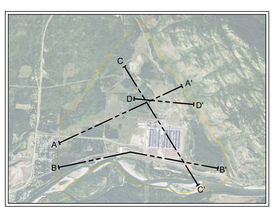
NOTE

POTENTIOMETRIC HEAD GROUNDWATER ELEVATIONS ARE BASED ON AUGUST 30, 2016 GAUGING DATA.

GEOLOGIC CROSS SECTION C–C'

HORIZONTAL SCALE: 1" = 125'
VERTICAL SCALE: 1" = 25'
VERTICAL EXAGGERATION = 5X

50'
25'
0
0 125' 250'



GENERALIZED HYDROGEOLOGIC CROSS-SECTION C-C'

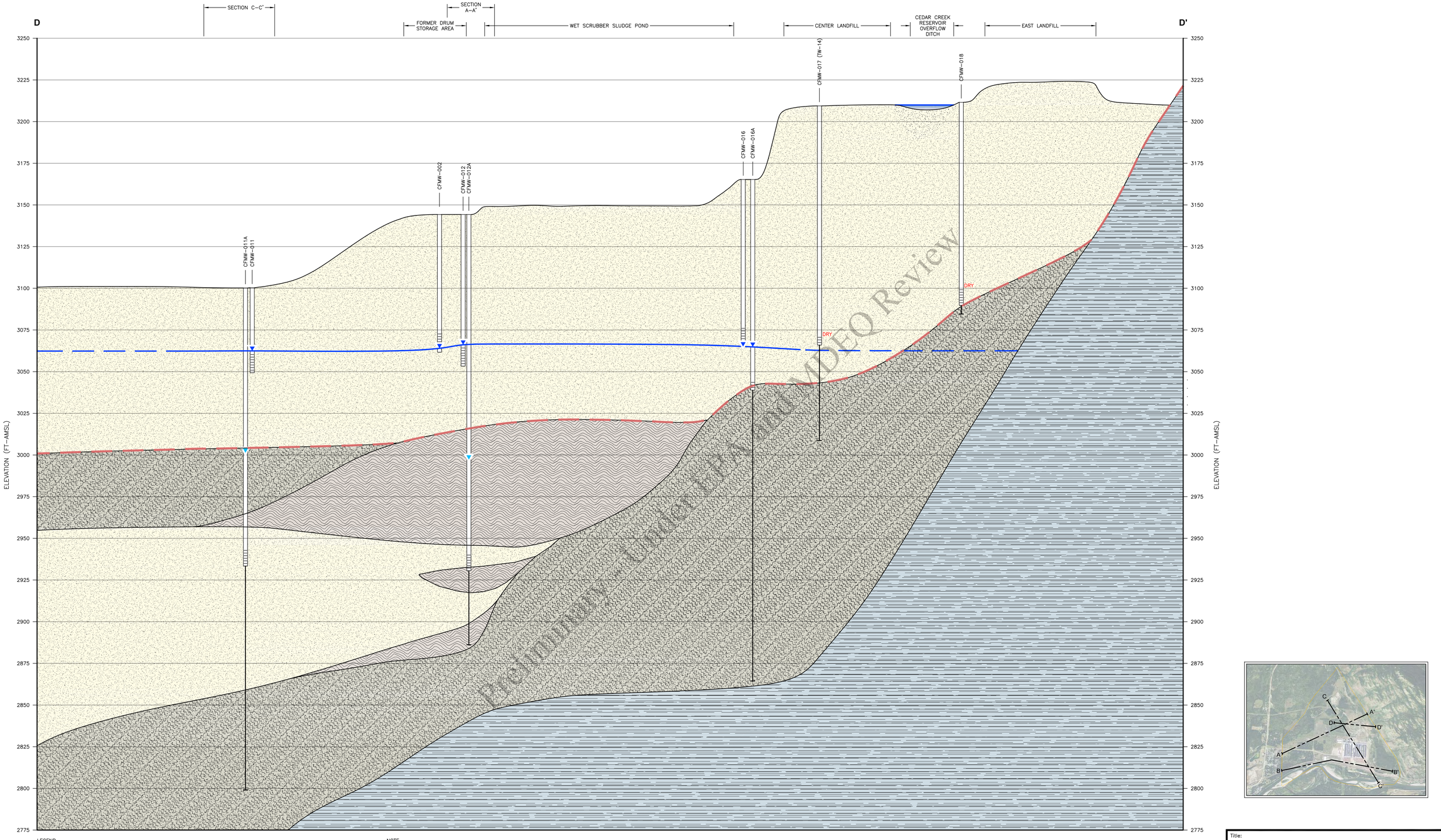
Title:

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 08AUG16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	9
File: 2476.0001Y142.01.DWG		

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Preliminary - Under WDEQ Review

LEGEND

- FINE TO COARSE SAND WITH VARYING AMOUNTS OF GRAVEL AND SILT
- PRIMARILY CLAY WITH SOME SILT AND VARYING AMOUNTS OF SANDS AND GRAVELS
- FINE TO COARSE SAND AND SILT WITH VARYING AMOUNTS OF GRAVEL AND CLAY
- BEDROCK
- POTENTIOMETRIC HEAD GROUNDWATER ELEVATION
- MONITORING WELL GROUNDWATER SCREENED IN THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- MONITORING WELL GROUNDWATER SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT POTENTIOMETRIC SURFACE
- INFERRED BASE OF UPPER HYDROGEOLOGIC UNIT

NOTE

POTENTIOMETRIC HEAD GROUNDWATER ELEVATIONS ARE BASED ON AUGUST 30, 2016 GAUGING DATA.

GEOLOGIC CROSS SECTION D–D'

HORIZONTAL SCALE: 1" = 125'
VERTICAL SCALE: 1" = 25'
VERTICAL EXAGGERATION = 5X

50'
25'
0
0
125'
250'

Title:

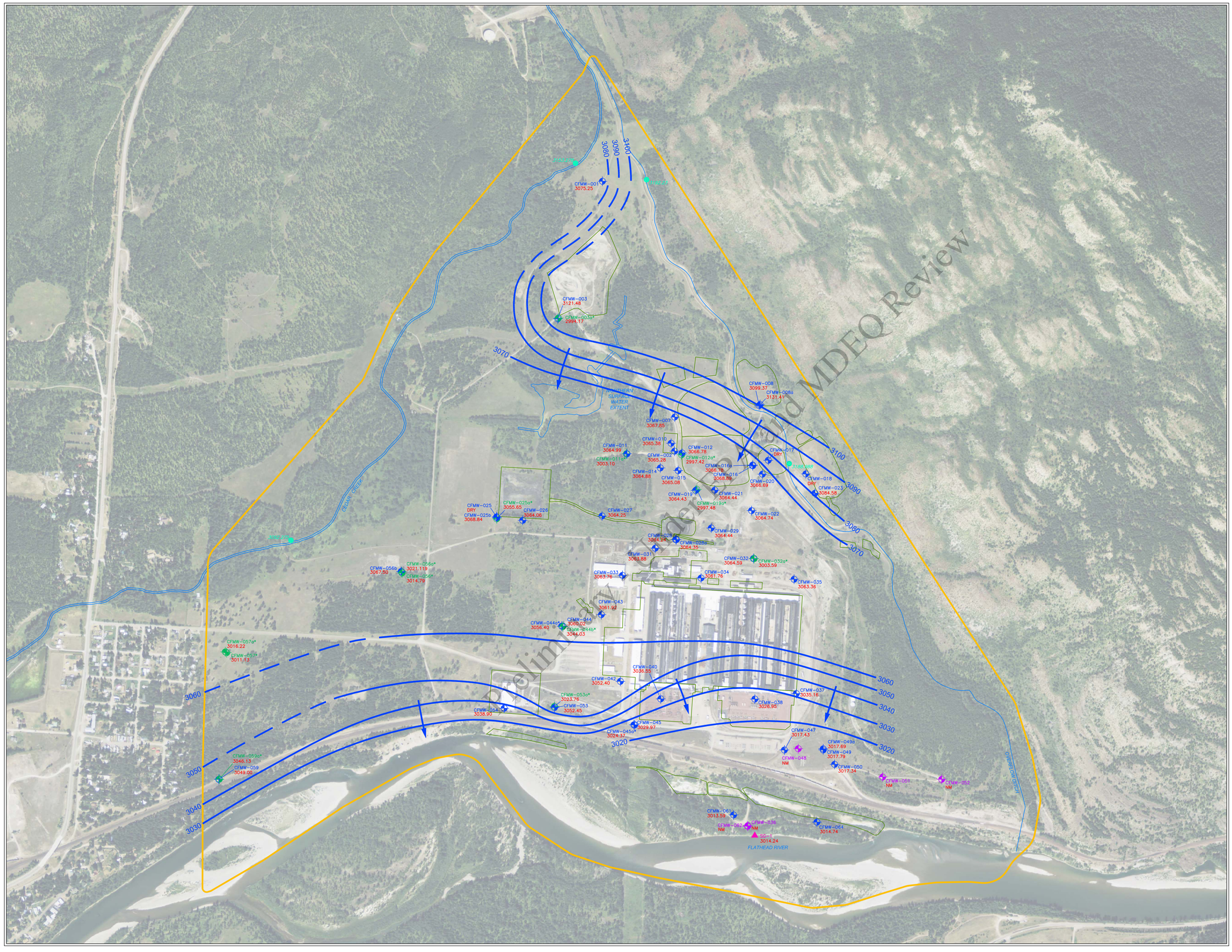
GENERALIZED HYDROGEOLOGIC CROSS-SECTION D-D'

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 08AUG16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	10
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.01.DWG		

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N

LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT
- CFMW-052 — LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL
- CFMW-032a* — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT
- SG-1 — LOCATION AND DESIGNATION OF SURFACE WATER STAFF GAUGE
- 3188.988 — LOCATION WHERE SITE FEATURE WAS SURVEYED
- 3071.06 — POTENTIOMETRIC SURFACE IN FEET ABOVE MEAN SEA LEVEL
- NM — NOT MEASURED
- * — NOT USED IN CONTOURING
- 3080 — CONTOUR LINE OF EQUAL POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)
- INFERRED FLOW DIRECTION

NOTE

MONITORING WELLS SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT ARE NOT USED IN CONTOURING.

500' 0 500'

Title:

POTENTIOMETRIC SURFACE CONTOUR MAP UPPER HYDROGEOLOGIC UNIT AUGUST 30, 2016

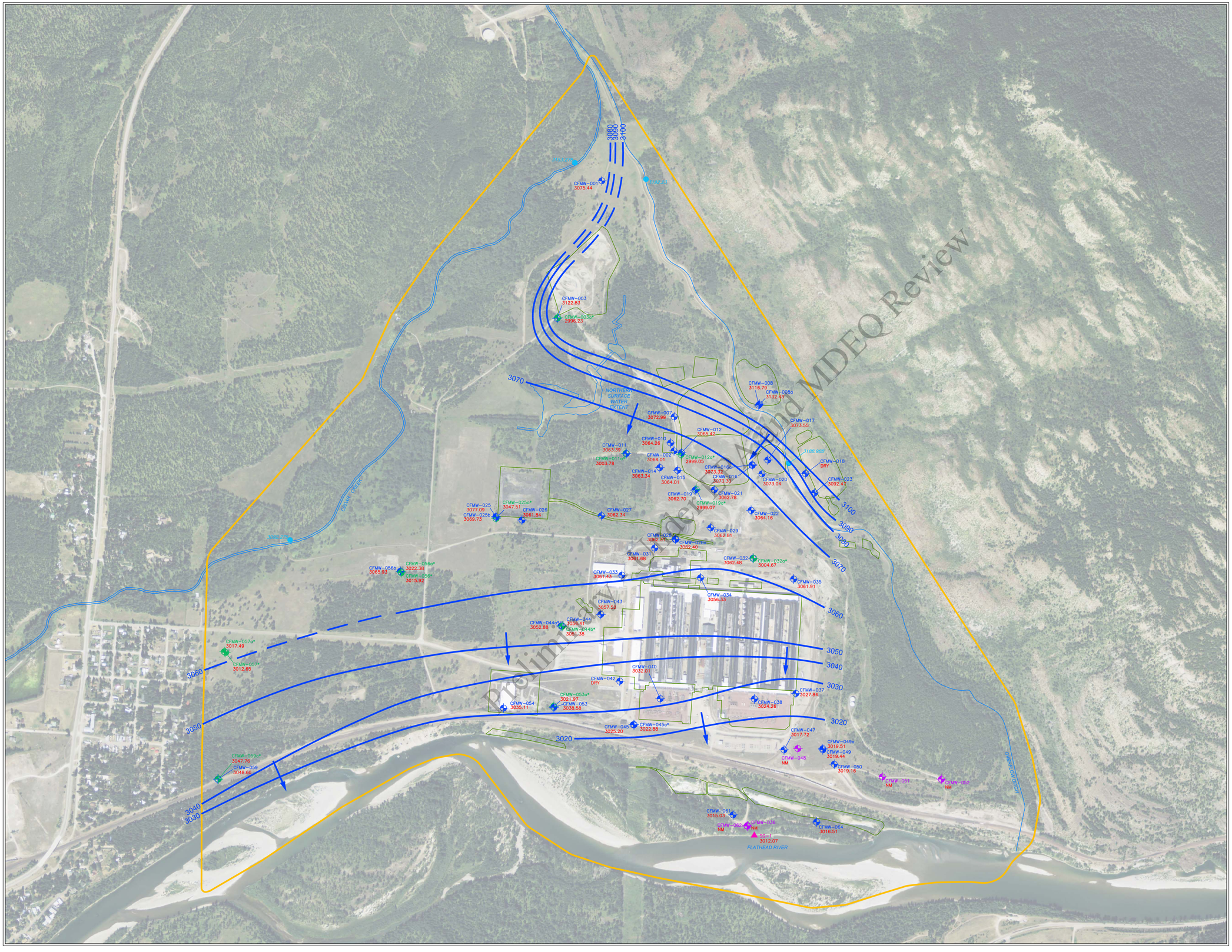
Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 02SEPT16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	11
File: 2476.0001Y145.01.DWG		

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Agency and MDEQ Review
Preliminary Draft - Under Review

N

LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT
- CFMW-052 — LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL
- CFMW-032a* — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT
- SG-1 — LOCATION AND DESIGNATION OF SURFACE WATER STAFF GAUGE
- 3188.988 — LOCATION WHERE SITE FEATURE WAS SURVEYED
- 30.52.88 — POTENTIOMETRIC SURFACE IN FEET ABOVE MEAN SEA LEVEL
- NM — NOT MEASURED
- * — NOT USED IN CONTOURING
- 3080 — CONTOUR LINE OF EQUAL POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)
- INFERRED FLOW DIRECTION

NOTE

MONITORING WELLS SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT ARE NOT USED IN CONTOURING.

500' 0 500'

Title:

POTENTIOMETRIC SURFACE CONTOUR MAP UPPER HYDROGEOLOGIC UNIT NOVEMBER 29, 2016

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: L.J.	Date: 01DEC16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	12
File: 2476.0001Y142.02.DWG		

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CFSDP-014
CFSDP-013
0 - 0.5
CFSDP-015
CFSDP-021
0 - 0.5
CFSDP-022
0 - 0.5
CFSDP-012
0 - 0.5
CFMW-008a
90 - 91
CFMW-011a
81 - 82
CFMW-011a
136 - 137
CFMW-011a
155 - 156
CFMW-013a
121 - 122
CFSDP-011
0 - 0.5
CFMW-016a
180 - 181
CFMW-023a
122 - 123
CFMW-025a
37 - 38
CFSDP-023
CFMW-025a
65 - 66
CFMW-025a
90 - 91
CFSDP-016
CFSDP-024
CFMW-032a
65 - 66
CFMW-032a
94 - 95
CFMW-032a
198 - 199
CFSDP-010
0 - 0.5
CFMW-045a
65 - 66
CFMW-045a
281 - 282
CFSDP-003
CFSDP-004
CFSDP-005
CFMW-059a
65 - 66
CFMW-059a
150 - 151
CFMW-059a
160 - 161
CFSDP-002
0 - 0.5
CFSDP-018
CFSDP-019
CFSDP-009
0 - 0.5
CFSDP-020
CFSDP-001
0 - 0.5
CFSDP-006
0 - 0.5
CFSDP-007
0 - 0.5
CFSDP-008
0 - 0.5
CFSDP-017
0 - 0.5

Preliminary - Under EPA and MDEQ Review

Image Source: 2013 National Agriculture Imagery Program

N

Legend

- Total Fines
- Total Gravel
- Total Sand
- Site Features
- Site Boundary
- Creek Features
- Northern Surface Water Feature Extent

400 0 400
Feet

Title:

GRAIN SIZE DISTRIBUTION IN SOIL AND SEDIMENT SAMPLES

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

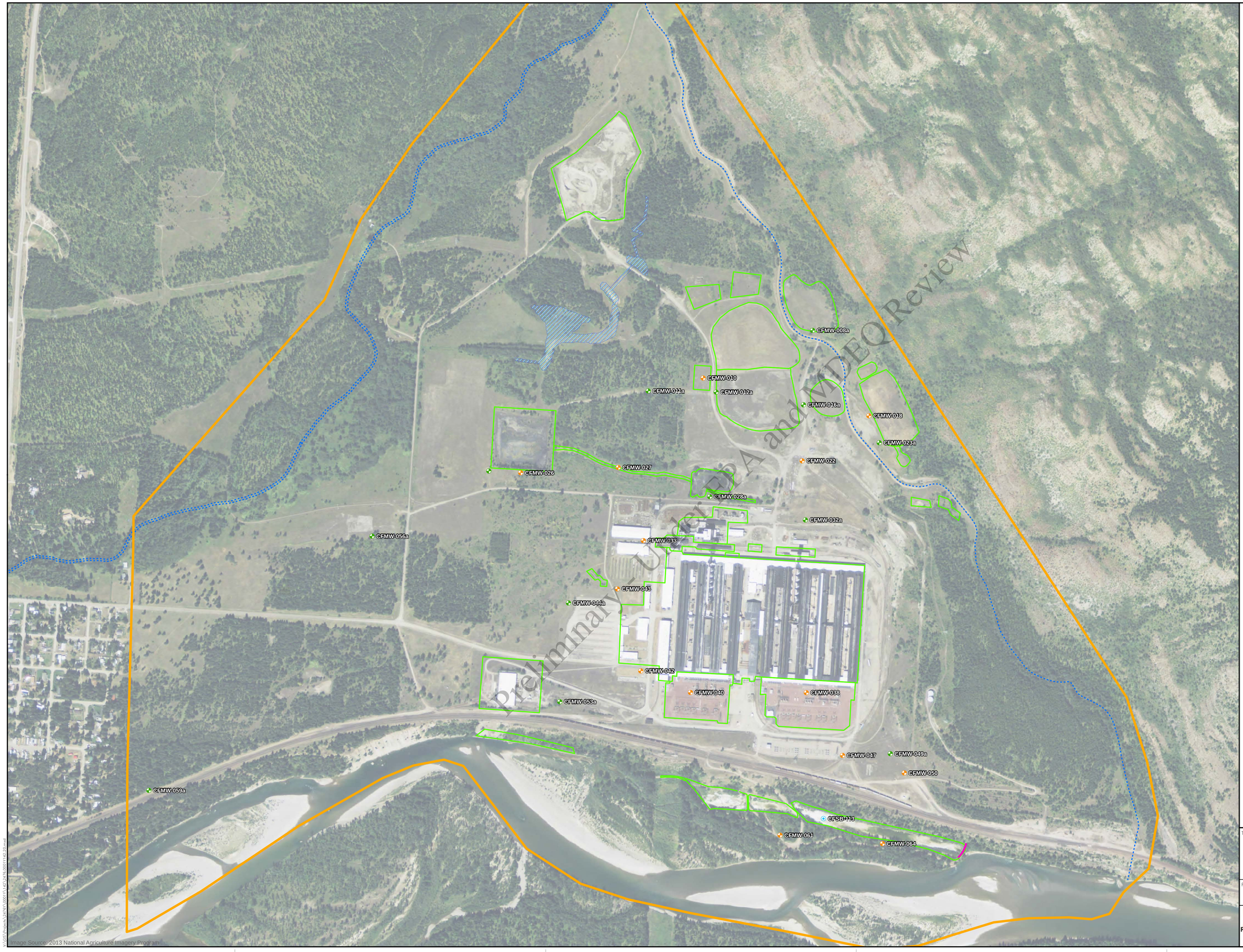
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 20FEB17
Prepared by: M.R.	Scale: AS SHOWN
Project Mgr: M.R.	Project: 2476.0001Y002
File: 2476.0001Y142.65	

PLATE **13**

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N

Legend

- Phase I Deep Monitoring Well Locations
- Phase I Water Table Monitoring Well Locations
- Soil Boring Locations
- Extent of Bank Stabilization Sheet Piling
- Site Features
- Site Boundary
- Creek Features
- Northern Surface Water Feature Extent

Sample Location ID:	Bulk Lead Concentration	Sieved Lead Concentration
CFMW-008a	23.3 J+	21.9
CFMW-010	13.5	45.8
CFMW-011a	11.2	7.9
CFMW-012a	15 J	15
CFMW-016a	23.3 J	20.6
CFMW-018	12.4	9.7
CFMW-022	9.1	21.6
CFMW-023a	13.4	12
CFMW-025a	18.5	20.3
CFMW-026	44.8 J+	37.8
CFMW-027	30.3	35.2
CFMW-028a	9.7	10.9
CFMW-032a	13.7	13.3
CFMW-033	9.2	47.3
CFMW-038	12.4	8.2
CFMW-040	57.7 J-	184
CFMW-042	28.2 J+	20.7
CFMW-043	23.2 J+	23.7
CFMW-044a	10.5 J	13.8
CFMW-047	11.6 J	13.2
CFMW-049a	4.4 J	19.4
CFMW-050	31.7	23.7
CFMW-053a	12.2 J+	17.2
CFMW-056a	13.1	13.6
CFMW-059a	9.3 J+	11.7
CFMW-061	8.9	15.2
CFMW-064	12.4	10.4
CFSB-113	8	6.6

Notes

J = Indicates Estimated Value
J+ =
J- =

400 0 400
Feet

Title:
LEAD CONCENTRATION IN BULK VS SIEVED SOIL SAMPLES

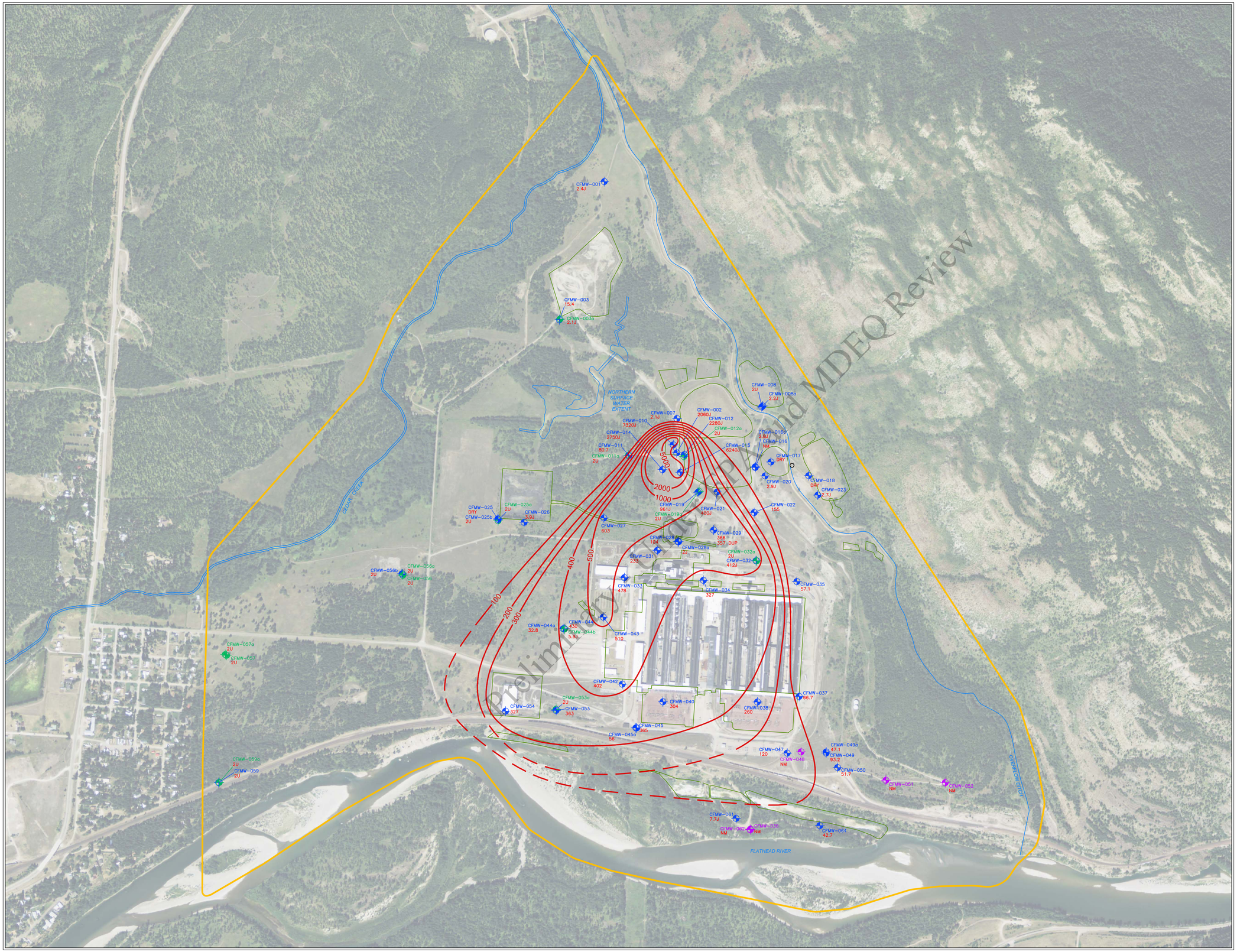
2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 17FEB17	PLATE 14
Prepared by: M.R.	Scale: AS SHOWN	
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.20		

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N

LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT
- CFMW-052 — LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL
- CFMW-032a* — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT
- 327 — CYANIDE CONCENTRATIONS IN GROUNDWATER (UNITS IN ug/L)
- NM — NOT MEASURED
- 100 — CONTOUR LINE OF CYANIDE CONCENTRATION (DASHED WHERE INFERRED)

NOTE

CONTOURS ARE FOR THE UPPER HYDROGEOLOGIC UNIT WELLS ONLY

500' 0 500'

Title:

CONCENTRATIONS OF TOTAL CYANIDE IN GROUNDWATER SEPTEMBER 2016

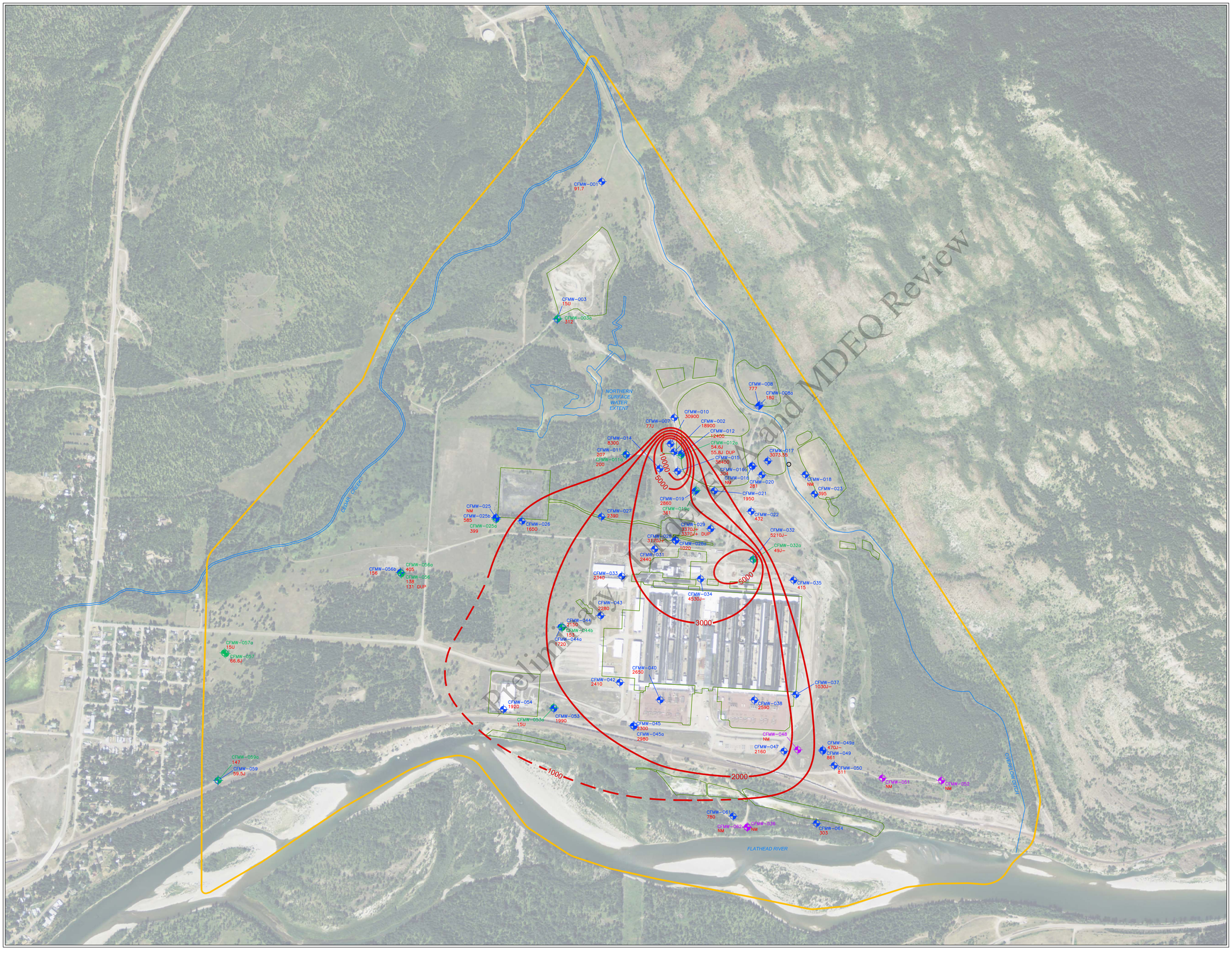
Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 01DEC16	PLATE
Prepared by: G.M.	Scale: AS SHOWN	15
Project Mgr: M.R.	Project: 2476.0001Y002	
File: 2476.0001Y142.03.DWG		

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LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT
- CFMW-052 — LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL
- CFMW-032a* — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT
- 327 — FLUORIDE CONCENTRATIONS IN GROUNDWATER (UNITS IN ug/L)
- NM — NOT MEASURED
- 100 — CONTOUR LINE OF FLUORIDE CONCENTRATION (DASHED WHERE INFERRED)

NOTE

CONTOURS ARE FOR THE UPPER HYDROGEOLOGIC UNIT WELLS ONLY

500' 0 500'

Title:

CONCENTRATIONS OF FLUORIDE IN GROUNDWATER SEPTEMBER 2016

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