NewFields
Perspective. Vision. Solutions.

April 3, 2017

Keith Large
Montana Department of Environmental Quality
Petroleum Technical Section
P.O. Box 200901
Helena, Montana 59620-0901

RE: **Groundwater Monitoring Report – June 2016 & December 2016**
Former Stimson Lumber Millsite, Bonner, Montana

Dear Mr. Large,

Please find enclosed a groundwater monitoring report summarizing monitoring well sampling activities completed at the former Stimson Lumber Millsite facility in Bonner, Montana. Please call me at (406) 549-8270 to discuss the results presented in this report.

Sincerely,

Tyler Etzel
Senior Geologist

cc: Steven Petrin, Stimson Lumber Company
Brent Sasser, International Paper (electronic copy)
Michelle Hutchinson, Missoula County Sanitarian (electronic copy)

Groundwater Monitoring Report
June/Dec 2016

Former Stimson Lumber Bonner Millsite
Bonner, Montana 59702

Prepared for:
Steven Petrin
Stimson Lumber Company
520 SW Yamhill, Suite 700
Portland, OR 97204-1330

Prepared by:
NewFields
1120 Cedar Street
Missoula, Montana 59802

NewFields

January 2017
Project No. 350.0033

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1.0 ACTIVITY SUMMARY

This work has been performed to comply with requirements of an April 19, 2010 administrative order on consent (AOC) issued by the Montana Department of Environmental Quality (DEQ) and a request from the DEQ Petroleum Technical Section (PTS) in telephone and email correspondence dated October 1, 2012. The AOC required, in part, groundwater sampling at high and low groundwater elevations, with sampling continuing until two consecutive rounds demonstrate that groundwater meets DEQ-7 standards for PCBs and meets Tier I RBSLs for petroleum hydrocarbons.

In accordance with the AOC, Stimson Lumber Company (Stimson) requested removal of five monitoring wells from the semi-annual monitoring schedule in a May 20, 2016 letter to DEQ. The five wells (MW-10, MW-13R, MW-14, MW-15R, and MW-18) showed no detections above DEQ numeric water quality (Circular WQB-7) standards for polychlorinated biphenyls (PCBs) and Tier 1 Risk-Based Screening Levels (RBSLs) for petroleum hydrocarbons for a minimum of four (4) consecutive semi-annual monitoring events. However, email correspondence from DEQ on May 23, 2016 required continued semi-annual monitoring of one of these wells (MW-13R) along with MW-11, MW-19, MW-20, MW-21, and MW-23.

1.1 Groundwater Sampling Methodology

Groundwater samples were collected with a variable rate, low-flow submersible pump. Sample collection was performed when pH readings stabilized to within 0.1 and temperature and conductivity stabilized to within 5% over three casing volumes. Groundwater chemistry was recorded on NewFields groundwater sampling forms. The water samples were collected and preserved with appropriate acid preservative. The samples were submitted under appropriate custody and seals to Energy Laboratory in Billings, Montana for extractable petroleum hydrocarbon screen (EPH-Screen) and polychlorinated biphenyls (PCBs – EPA Method 8082). Results of the water analyses are discussed in **Section 3.0**, below. Copies of groundwater sampling forms and field activity forms are included as **Appendix A**.

1.2 June 2016 Groundwater Monitoring

On June 1 through June 2, 2016, groundwater samples were collected from the following six monitoring wells: MW-11, MW-13R, MW-19, MW-20, MW-21 and MW-23. Monitoring well MW-11 was measured for light non-aqueous phase liquid (LNAPL) with an oil-water interface to determine if groundwater sample collection was feasible for this well. The probe did not indicate free product within the well, so it was sampled. In addition to the six sampled wells, two additional wells (MW-10, and MW-15R) were measured for static water level (SWL).

1.3 December 2016 Groundwater Monitoring

On December 12 through December 13, 2016, groundwater samples were collected from MW-11, MW-13R, MW-19, MW-20, MW-21 and MW-23. Monitoring well MW-11 was measured for LNAPL with a disposable bailer to determine if groundwater sample collection was feasible for this well. The bailer did not display free product, so MW-11 was sampled. In addition to the six wells that were sampled, two additional wells (MW-10, and MW-15R) were measured for SWL.

2.0 SOIL LABORATORY ANALYTICAL REPORTS

The laboratory analytical report for groundwater monitoring is included as **Appendix B**.

3.0 SUMMARY AND RECOMMENDATIONS

NewFields completed groundwater monitoring in June 2016 and December 2016 at the Former Stimson Lumber Millsite in Bonner, Montana. SWL measurements, casing elevations, and groundwater elevations for eight monitoring wells are given below in **Table 1**.

Table 1 Groundwater Elevations – June and December 2016

Monitoring Well	Event Date	Casing Elevation (ft amsl)	Depth to Water (ft)	LNAPL Thickness (ft)	GW Elevation (ft amsl)
MW-10	June 2016	3285.46	37.96	0.0	3247.50
	December 2016		41.53	0.0	3243.93
MW-11	June 2016	3278.55	31.12	0.0	3247.36
	December 2016		34.60	0.0	3243.88
MW-13R	June 2016	3279.55	31.31	0.0	3248.24
	December 2016		34.63	0.0	3244.92
MW-15R	June 2016	3287.12	39.74	0.0	3247.38
	December 2016		43.28	0.0	3243.84
MW-19	June 2016	3292.22	44.83	0.0	3247.39
	December 2016		48.41	0.0	3243.81
MW-20	June 2016	3292.15	44.86	0.0	3247.29
	December 2016		48.41	0.0	3243.74
MW-21	June 2016	3293.32	46.01	0.0	3247.31
	December 2016		49.63	0.0	3243.69
MW-23	June 2016	3288[1]	41.32	0.0	3246.68
	December 2016		44.88	0.0	3243.12

1 Estimated TOC elevation (Well not surveyed)

Groundwater potentiometric contours calculated from depth to water measurements in monitoring wells (MW-10, MW-11, MW-13R, MW-15R, MW-19, MW-20, MW-21, and MW-23) generally showed a southwestern groundwater flow direction (**Figure 2**). Analytical results for groundwater samples collected from six monitoring wells are tabulated in **Table 2**, below and the complete laboratory reports are included in **Appendix B**.

Table 2 Groundwater Analytical Results in parts per billion (µg/L) – June and December 2016

Analysis	Regulatory Standard	MW-11		MW-13R		MW-19		MW-20		MW-21		MW-23	
		June 2016	Dec 2016	June 2016	Dec 2016	June 2016	Dec 2016	June 2016	Dec 2016	June 2016	Dec 2016	June 2016	Dec 2016
EPH	**Tier 1 RBSL[1]**												
TEH (SW 8015M)	**1,000[2]**	**1,420**	**1,440**	ND	ND	ND	ND	ND	ND	ND	ND	**380**	ND
C9-C18 Aliphatics	**1,400**	ND	ND	----	----	----	----	----	----	----	----	----	----
C19-C36 Aliphatics	**1,000**	**1,030**	**1,040**	----	----	----	----	----	----	----	----	----	----
C11-C22 Aromatics	**1,100**	ND	ND	----	----	----	----	----	----	----	----	----	----
TEH (MA EPH)	**NP[3]**	**1,170**	**1,150**	----	----	----	----	----	----	----	----	----	----
PCBs	**WQB-7[4]**												
Aroclor 1016	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1262	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	**0.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

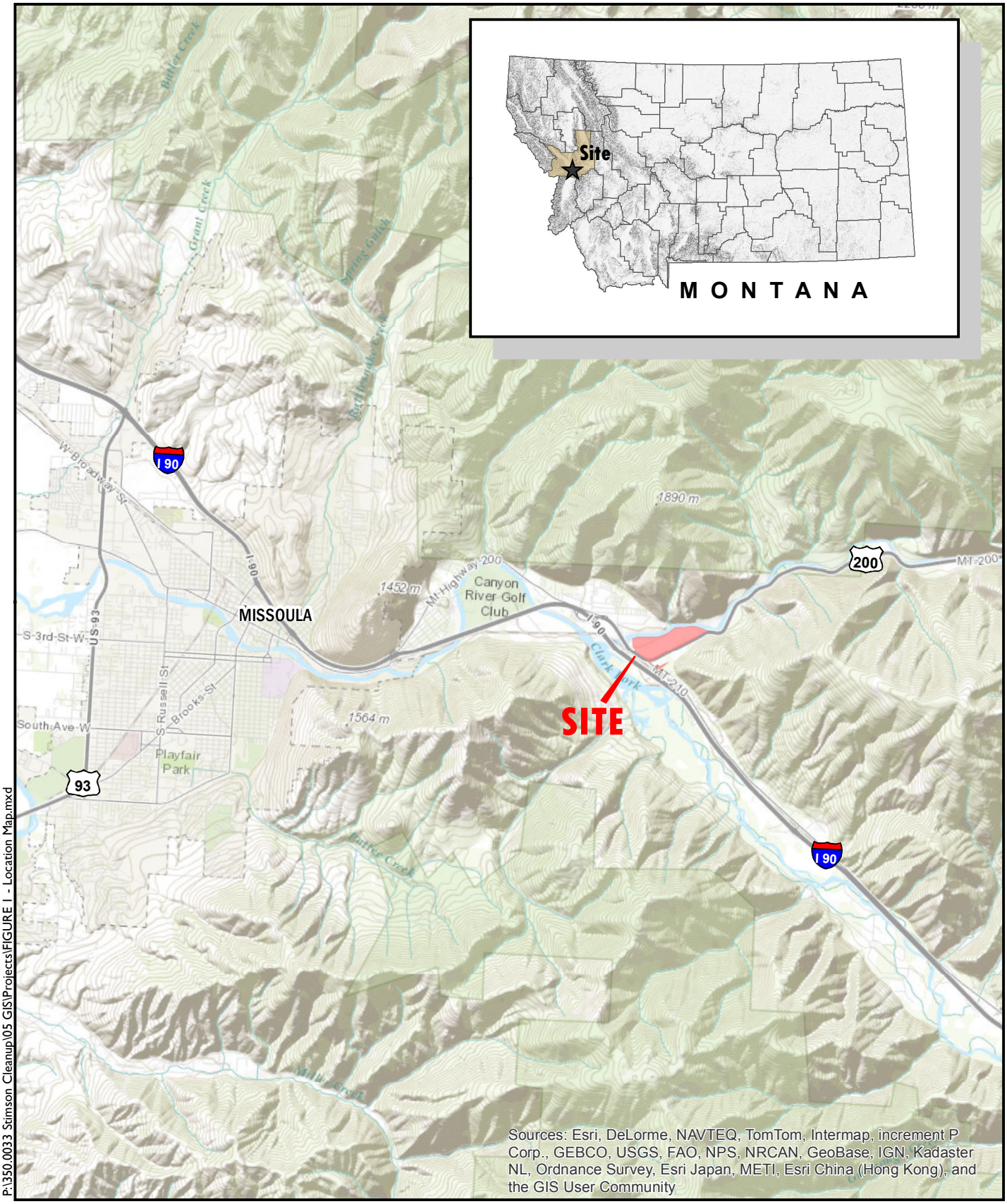
Notes: [1] Table 3 Tier 1 Groundwater Risk-Based Screening Levels, September 2016
[2] the indicated value is the DEQ EPH Screen fractionation level for groundwater
[3] NP indicates DEQ has no published screening level for TEH
[4] Circular WQB-7, Montana Water Quality Standards, January 2004
ND - indicates the parameter was not detected above the laboratory reporting limit
---- indicates parameter not analyzed

Laboratory results from both the June and December 2016 monitoring events did not detect PCBs in any monitoring well above laboratory reporting limits. The June 2016 EPH Screen results detected total extractable hydrocarbons (TEH by SW 8015M) in MW-11 and MW-23, and MW-11 detected TEH above the EPH fractionation screening level of 1,000 ug/L, at 1,420 ug/L. MW-11 was analyzed for EPH fractions and the results were below laboratory detection limits for C9-C18 aliphatics and C11-C22 aromatics, but above Tier 1 RBSLs for C19-C36 aliphatics at 1,030 ug/L. The December 2016 monitoring event detected TEH in MW-11, but in no other wells. The TEH result for MW-11 required EPH fractions analysis, and similar to the June 2016 monitoring event, the C19-C36 aliphatics fraction exceeded Tier 1 RBSLs at 1,040 ug/L.

Although MW-11 detected C19-C36 aliphatics above DEQ Tier 1 RBSLs for both the June and December 2016 monitoring events, the remaining wells showed either no detections or trace detections of chemicals of concern.

Stimson requests MW-13R be removed from the groundwater monitoring schedule. MW-13R has had no detections above laboratory detection limits for three consecutive semi-annual monitoring events.

FIGURES



P:\350.0033 Stimson Cleanup\05 GIS\Projects\FIGURE 1 - Location Map.mxd

0 Feet 10,000

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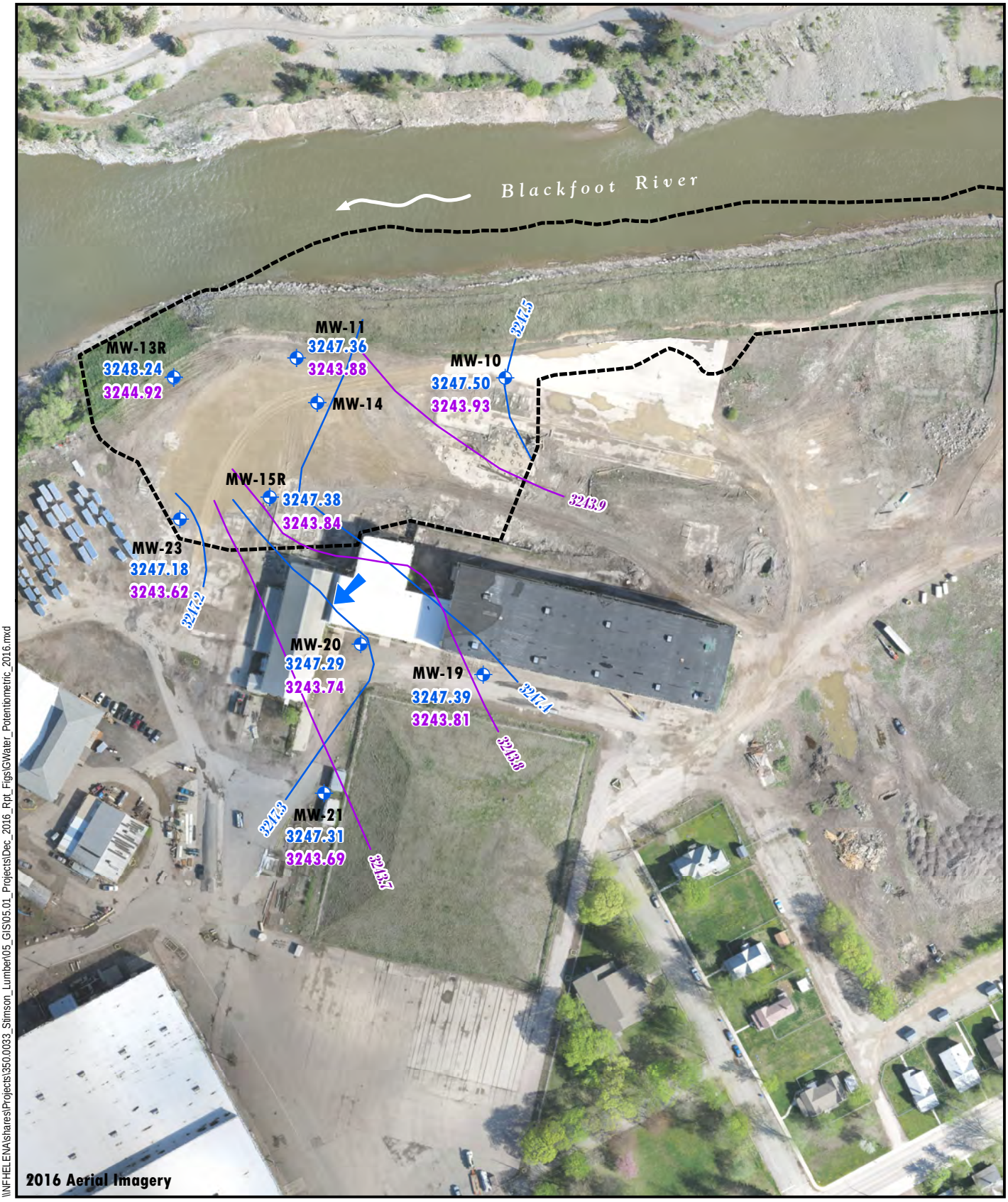
Location Map
Former Stimson Bonner Millsite
Bonner, Montana
FIGURE 1



\\NFHELENA\shares\Projects\350.0033_Stimson_Lumber\05_GIS\05.01_Projects\Dec_2016_Rpt_Figs\GWater_Potentiometric_2016.mxd

N

0 Feet 200

NewFields

AOC Boundary (2016)

Existing Monitoring Wells

June 2016 Potentiometric Contours (0.1 foot interval)

3247.39 June 2016 Groundwater Elevations (feet amsl)

December 2016 Potentiometric Contours (0.1 foot interval)

3243.69 December 2016 Groundwater Elevations (feet amsl)

General Groundwater Flow Direction

Groundwater Potentiometric Map June/Dec 2016
Groundwater Monitoring
Former Stimson Bonner Millsite
Bonner, Montana
FIGURE 2

\\NFHELENA\shares\Projects\350.0033_Stimson_Lumber\05_GIS\05.01_Projects\Dec_2016_Rpt_Figs\EPH_Screening_2016.mxd

N

0 200
Feet

NewFields

AOC Boundary (2016)

Existing Monitoring Wells

1420 June 2016 EPH Results (ppb)

ND December 2016 EPH Results (ppb)

Note: ND - Not Detected; ppb - parts per billion

June/December 2016
EPH Screen Results
June/December 2016
Groundwater Monitoring
Former Stimson Bonner Millsite
Bonner, Montana
FIGURE 3

\\NFHELENA\shares\Projects\350.0033_Stimson_Lumber\05_GIS\05.01_Projects\Dec_2016_Rpt_Figs\Aroclor_Results_2016.mxd

N

0 200
Feet

NewFields

AOC Boundary (2016)

Existing Monitoring Wells

ND June 2016 Aroclor 1254 Results

Note: ND - Not Detected

ND December 2016 Aroclor 1254 Results

June/December 2016
Aroclor 1254 Results
June/December 2016
Groundwater Monitoring
Former Stimson Bonner Millsite
Bonner, Montana
FIGURE 4

APPENDIX A

Groundwater Sampling and Field Activity Forms

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: NewFields

Project Name, PWS, Permit, Etc.: Stimson GWM

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Report Mail Address (Required): 1120 Cedar Street Missoula, MT 59802

Contact Name: Tyler Etzel

Phone/Fax: (406) 549-8270

Cell: (406) 240-7795

Sampler: (Please Print) Ty Schmechel

☐ No Hard Copy Email: tetzel@newfields.com

Invoice Contact & Phone: Dom McCammon (406) 549-8270

Purchase Order:

Quote/Bottle Order: 102330

Invoice Address (Required): 11 11

☐ No Hard Copy Email: dmccammon@newfields.com

Special Report/Formats:

☐ DW
☐ POTW/WWTP
☐ State: _____
☐ Other: _____
☐ EDD/EDT (Electronic Data) Format: _____
☐ LEVEL IV
☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	EPA SW 8015	PCBs SW 8082	SEE ATTACHED	Standard Turnaround (TAT)
1 MW-11	6/2/16	1410	W				X
2 MW-13R	6/2/16	1055					
3 MW-19	6/2/16	0908					
4 MW-20	6/2/16	0810					
5 MW-21	6/1/16	1505					
6 MW-23	6/1/16	1400					
7							
8							
9							
10							

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: *3 coolers *

Shipped by:

Cooler ID(s):

Receipt Temp _____ °C

On Ice: Y N

Custody Seal
On Bottle Y N
On Cooler Y N

Intact Y N

Signature Match Y N

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Ty Schmechel	6/2/16 / 1700	Ty S			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	Date/Time:	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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Y N
Y N
Y N
Y N
Y N

NewFields Perspective. Vision. Solutions.	Project: Stimson	Personnel:
	Project # 350.0037	T. Schmechel
	Date/Time: 6-2-16 / 1410	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-11		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring	Total Depth: 50 ft (bgs / bmp)	Casing Type: PVC	
SWL before purging: 31.12 (bgs / bmp)	SWL post purge: (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Stick-up

Purge & Sampling Equipment

Pump Type: Submersible	Pump Depth: ~33 (ft)	bgs / bmp
Purging Method: Low-flow	Sampling Method: Low-flow	1 ft³ = 7.48 gal
1 Casing Vol: ~3 gal	3 Casing Vol: ~9 gal	Total Vol. Removed:

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.						
Redox	* See 6/2/12 Calibration Sheet *					
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
1307										Begin purge
1322	31.14		3.5	8.4	7.18	448	-	-		slightly turbid; PHC odor
1337	31.15		7.0	8.6	7.18	450	-	-		visually clear; PHC odor
1352	31.15		10.5	8.5	7.17	451	-	-		visually clear; PHC odor
1407	31.15		14.0	8.5	7.18	450	-	-		visually clear; PHC odor
1410										End purge & collect samples

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-11	1410	EPH	H_2SO_4	SW8015	2x 1L Amber
MW-11	1410	PCBs	None	SW8082	1x 1L Amber

Samples Analyzed by:	Lab Name: Energy Labs

NewFields Perspective. Vision. Solutions.	Project: Stimson	Personnel:
	Project # 350.0033	T. Schmechel
	Date/Time: 6-2-16 / 1055	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-13R		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring	Total Depth: 55 ft (bgs / bmp)	Casing Type: PVC	
SWL before purging: 31.31 (bgs / bmp)	SWL post purge: 31.34 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: stick-up

Purge & Sampling Equipment

Pump Type: Submersible	Pump Depth: ~ 35 (ft)	bgs / bmp
Purging Method: Low-flow	Sampling Method: Low-flow	1 ft³ = 7.48 gal
1 Casing Vol: 14.6 L	3 Casing Vol: 43.9 L	Total Vol. Removed: 29.5 L

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.	* See	6/2/16	Calibration	Sheet *		
Redox						
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
0951										Begin purge
1020	31.34		14.6	9.7	7.10	332	-	-		visually clear
1035	31.34		22.0	9.8	7.11	332	-	-		visually clear
1050	31.34		29.5	9.8	7.11	333	-	-		visually clear
1055										End purge & collect samples

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-13R	1055	EPH	H_2SO_4	SW 8015	2x 1L Amber
MW-13R	1055	PCBs	None	SW 8082	1x 1L Amber

Samples Analyzed by:	Lab Name: Energy Labs

NewFields Perspective. Vision. Solutions.	Project: Stimson	Personnel:
	Project # 350.0033	T. Schmechel
	Date/Time: 6-2-16 / 0908	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-19		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring	Total Depth: 50 ft (bgs / bmp)	Casing Type: PVC	
SWL before purging: 44.85' (bgs / bmp)	SWL post purge: 44.86' (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: stick-up

Purge & Sampling Equipment

Pump Type: Submersible	Pump Depth: ~46.0 (ft)	bgs / bmp
Purging Method: Low-flow	Sampling Method: Low-flow	$1 ft^3 = 7.48$ gal
1 Casing Vol: 3.2 L	3 Casing Vol: 9.6 L	Total Vol. Removed:

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.	* See	6/2/16	Calibration	Sheet *		
Redox						
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
0832										Begin purge
0838	44.86		3.2	10.6	7.54	368	-	-		slightly turbid
0844	44.86		6.4	10.6	7.55	364	-	-		visually clear
0850	44.86		9.6	10.5	7.55	365	-	-		visually clear
0856	44.86		12.8	10.5	7.54	363	-	-		visually clear
0902	44.86		16.0	10.5	7.54	364	-	-		
0908	44.86		19.2	10.5	7.54	365	-	-		

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-19	0908	EPH	H_2SO_4	SW 8015	2x 1L Amber
MW-19	0908	PCBs	None	SW8082	1x 1L Amber

Samples Analyzed by:	Lab Name: ~~[illegible]~~ Energy Labs

NewFields Perspective. Vision. Solutions.	Project: Stimson	Personnel:
	Project # 350.0037	T. Schmechel
	Date/Time: 6-2-16 / 0810	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-20		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring	Total Depth: 50 ft (bgs / bmp)	Casing Type: PVC	
SWL before purging: 44.86 (bgs / bmp)	SWL post purge: 44.86 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Stick-up

Purge & Sampling Equipment

Pump Type: Submersible	Pump Depth: ~ 46.5 (ft) bgs / bmp	
Purging Method: Low-flow	Sampling Method: Low-flow	1 ft³ = 7.48 gal
1 Casing Vol: 3.2 L	3 Casing Vol: 9.6 L	Total Vol. Removed: 16.0 L

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.	* See	6/2/16	Calibration	Sheet *		
Redox						
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
0740										Begin purge
0746	44.88		3.2	10.5	7.20	451	-	-		slightly turbid
0752	44.86		6.4	10.6	7.26	387	-	-		visually clear
0758	44.86		9.6	10.5	7.27	381	-	-		visually clear
0804	44.86		12.8	10.4	7.27	383	-	-		visually clear
0810	44.86		16.0	10.4	7.27	381	-	-		visually clear
										End purge & collect samples

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-20	0810	EPH	H_2SO_4	SW 8015	2x 1 L Amber
MW-20	0810	PCBs	None	SW 8082	1x 1 L Amber

Samples Analyzed by: Lab Name: ~~[illegible]~~ ~~Analytical~~ Energy Labs

NewFields
Perspective. Vision. Solutions.

Project: Stimson		Personnel:
Project # 350.0053		T. Schmechel
Date/Time: 6-1-16 / 1505		

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-21		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring	Total Depth: 50 ft (bgs / bmp)	Casing Type: PVC	
SWL before purging: 46.01 (bgs / bmp)	SWL post purge: 47.2 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Stick-up

Purge & Sampling Equipment

Pump Type: Submersible	Pump Depth: ~47.5 (ft)	bgs / bmp
Purging Method: Low-Flow	Sampling Method: Low-Flow	$1 ft^3 = 7.48$ gal
1 Casing Vol: 0.65 gal (2.5 L)	3 Casing Vol: 1.95 gal (7.5 L)	Total Vol. Removed: 12.5 L

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.	* See	6/1/16	Calibration	Sheet	*	
Redox						
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
1433										Begin purge
1439	46.02		2.5	12.1	7.18	530	-	-		slightly turbid
1444	46.02		5.0	12.1	7.16	532	-	-		slightly turbid
1449	46.07		7.5	12.1	7.17	528	-	-		slightly turbid
1454	46.09		10.0	12.3	7.19	528				visually clear
1459	47.1		12.5	11.9	7.17	530	-	-		visually clear
1504										End purge & collect samples

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-21	1505	TPH	H_2SO_4	SW 8015	2x 1L Amber
MW-21	1505	PCBs	None	SW8082	1x 1L Amber

Samples Analyzed by:	Lab Name:	~~Pacific Analytical~~ Energy Labs

NewFields Perspective. Vision. Solutions.

Project: Stimson		Personnel:
Project # 350.0033		T. Schmechel
Date/Time: 6-1-16 / 1400		

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-23		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring Well	Total Depth: 60 ft (bgs / bmp)	Casing Type: PVC	
SWL before purging: 41.32 (bgs / bmp)	SWL post purge: 41.40 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: (Y) N	Cap/lid: (Y) / N	Photos taken: (Y) / N	Monument Type: Stick up

Purge & Sampling Equipment

Pump Type: Submersible	Pump Depth: ~48 (ft)	bgs / (bmp)	
Purging Method: Low-flow	Sampling Method: Low-flow	$1 ft^3 = 7.48$ gal	
1 Casing Vol: 3.04 gal	3 Casing Vol: 9.12 gal	Total Vol. Removed: 15.5 L	

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.	* see	6/1/16	Calibration	sheet *		
Redox						
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
1312										Begin Purge
1327	41.34		7.5	12.6	6.90	711	-	-		visually clear
1342	41.37		11.5	12.5	6.89	710	-	-		visually clear
1357	41.40		15.5	12.6	6.91	713	-	-		visually clear
1400										End purge & collect samples

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-23	1400	EPH	H_2SO_4	SW8015	2x 1L Amber
MW-23	1400	PCBs	None	SW8082	1x 1L Amber

Samples Analyzed by:	Lab Name: Energy Labs

DAILY FIELD RECORD

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NewFields
Perspective. Vision. Solutions.

Project and Task Number: 350.0053	Date: 6/1/16
Project Name: Stimson	Field Activity: Groundwater Monitoring
Location: Bonner, MT	Weather: Partly Sunny; ~75°F

Personnel: Name	Company	Time in	Time Out
Ty Schmechel	NewFields	1100	1605

PERSONAL SAFETY CHECKLIST

✓	Steel-toed boots		Hard Hat	✓	Traffic Vest
✓	Gloves	✓	Safety Goggles		Ear Protection

TIME	DESCRIPTION OF WORK PERFORMED
1100	Arrive on site
1105	Measure DTW @ MW-23: 41.33 ft bgs
1125	Measure DTW @ MW-21: 46.02 ft bgs
1130	Measure DTW @ MW-20: 44.80 ft bgs
1135	Measure DTW @ MW-19: 44.80 ft bgs
1143	Measure DTW @ MW-15R: 39.74 ft bgs
1152	Measure DTW @ MW-13R: 31.25 ft bgs
1200	Measure DTW @ MW-11: 31.07 ft bgs → No free product observed; faint PHC odor
1208	Measure DTW @ MW-14: 34.15 ft bgs
	↳ Insects (slugs) on water level tape
1215	MW-18 no longer exists → removed during Phase 4 Excavation
1225	Measure DTW @ MW-10: 37.96 ft bgs
1312	Begin purge @ MW-23
1357	End purge @ MW-23
1400	Collect samples @ MW-23
1433	Begin purge @ MW-21
~~1500~~ 1504	End purge @ MW-21
1505	Collect samples @ MW-21
1520	Begin decontaminating equipment & packing up truck
1602	Depart from site

DAILY FIELD RECORD

Page_____ of _____

NewFields
Perspective. Vision. Solutions.

Project and Task Number: 350.0033	Date: 6/2/16
Project Name: Stimson	Field Activity: Stimson Groundwater Monitoring
Location: Bonner, MT	Weather: Partly Cloudy, ~65°F

Personnel: Name	Company	Time in	Time Out
Ty Schmechel	NewFields	0715	1435

PERSONAL SAFETY CHECKLIST

✓	Steel-toed boots		Hard Hat	✓	Traffic Vest
✓	Gloves	✓	Safety Goggles		Ear Protection

TIME	DESCRIPTION OF WORK PERFORMED
0715	Arrive on site
0725	Begin set-up @ MW-20
0740	Begin purge @ MW-20
0810	Collect samples @ MW-20
0820	Begin decon @ MW-20
0825	Begin set-up @ MW-19
0832	Begin purge @ MW-19
0908	Collect samples @ MW-19
0918	Begin decon @ MW-19
0930	Begin set-up @ MW-13R
0951	Begin purge @ MW-13R
1055	Collect samples @ MW-13R
1105	Begin decon @ MW-13R
1120	Record GPS coordinates @ MW-23
1130	Depart from site for lunch
1235	Arrive back on site
1245	Begin set-up @ MW-11
1307	Begin purge @ MW-11
1410	Collect samples @ MW-11
1415	Decon equipment & pack-up
1435	Depart from site -- GWM complete

Field Calibration Sheet

NewFields
Perspective. Vision. Solutions.

Project Name: ~~R4 2014 Surface Water and GW Sampling~~ Stimson GW Monitoring

Project Number: ~~350.0123.000~~ 350.0033

Date: 6/2/16

Equipment Type: pH, Cond, °C Meter

Manufacturer Oakton

Model Number:

Serial Number: 977950

Calibration (as necessary, minimum twice per day): Time: 0650

Calibration #1

Calibration Standard: 7.00 Geotech Buffer Solution

Instrument Reading: 6.89

Calibration #2 Time: 0655

Calibration Standard: 4.00 Geotech Buffer Solution

Instrument Reading: 4.33

Calibration #3 Time: 0700

Calibration Standard: 10.00 Geotech Buffer Solution

Instrument Reading: 9.98

Calibration #4 Time: 0705

Calibration Standard: 1413 µS Geotech Conductivity Standard

Instrument Reading: 1275

Date of Last Calibration 6/1/16 Date(s) Instruments Used: 6/6/16

Name of person(s) who calibrated instruments: Ty Schmechel/~~Sally Staley~~

Calibration Standards Used:

1.
2.
3.
4.

Source of Calibration Standards:

Turbidity Calibration (NTU):

Standard 0.02 Results: NTU

Standard 10 Results: NTU

Standard 1000 Results: NTU

Misc. Comments:

Calibrated By: Ty Schmechel

Field Calibration Sheet

NewFields
Perspective. Vision. Solutions.

Project Name: ~~P4 2014 Surface Water and GW Sampling~~ Stimson GW Monitoring

Project Number: ~~350.0123.000~~ 350.0033

Date: 6/1/16

Equipment Type: pH/cond °C meter

Manufacturer Oakton

Model Number:

Serial Number: 977550

Calibration (as necessary, minimum twice per day): Time: 0945

Calibration #1

Calibration Standard: 7.00 Geotech Buffer Solution

Instrument Reading: 6.41

Calibration #2 Time: 0950

Calibration Standard: 4.00 Geotech Buffer Solution

Instrument Reading: 4.23

Calibration #3 Time: 0953

Calibration Standard: 10.00 Geotech Buffer Solution

Instrument Reading: 10.11

Calibration #4 Time: 0957

Calibration Standard: 1413 µS Geotech Conductivity Standard

Instrument Reading: 1278 µS @ 20.0 °C

Date of Last Calibration: -

Date(s) Instruments Used: -

Name of person(s) who calibrated instruments: Ty Schmechel/Sally Staley

Calibration Standards Used:

1.
2.
3.
4.

Source of Calibration Standards: Geotech

Turbidity Calibration (NTU):

Standard 0.02 Results: NTU

Standard 10 Results: NTU

Standard 1000 Results: NTU

Misc. Comments:

Calibrated By: Ty Schmechel

NewFields Perspective. Vision. Solutions.

Project: Stimson GW Sampling	Personnel:
Project # 350.0033.007	H. Gordbo
Date/Time: DEC. 13, 2016	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-11		Measuring Point (mp) TOC	(+GS)
Well Type: monitoring well	Total Depth: 53.00 (bgs / bmp)	Casing Type: PVC	
SWL before purging: 34.60 (bgs / bmp)	SWL post purge: (bgs / bmp)	Well Diameter: 2" ( )	
Well Locked: (Y)/ N	Cap/lid: (Y)/ N	Photos taken: (Y)/ N	Monument Type: Steel stickup

Purge & Sampling Equipment: YSI / Lamotte turbidity

Pump Type: Submersible Whale 60'	Pump Depth: ~40 ( ) bgs / bmp	
Purging Method: LOW FLOW	Sampling Method: LOW FLOW	$1ft^3$ = 7.48 gal
1 Casing Vol: 3.00 gallons	3 Casing Vol: 9.0 gallons	Total Vol. Removed:

Instrument Calibration: See Calibration Sheet on DEC 13, 2016

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
Guidelines/Goals	<0.3'	0.1-0.5	---	± 3%	± 0.1	± 3%	± 10%	± 10mV	± 10% or <10NTU	Note: Refer to SOP-12 A-C
1153	No Free Product observed in Bailer; Strong petro odor									
1150	34.60									
1215	Begin Purging well									
1217	34.60		4.0	10.3	6.90	451.0	0.17	-92.4	19.8	Slight sheen in
1222	34.60		8.0	10.3	6.93	451.5	0.20	-90.8	5.56	purge water
1227	34.60		11.0	10.5	6.93	451.3	0.22	-95.9	2.04	
1232	34.60		14.0	10.5	6.93	451.3	0.51	-99.3	1.48	Strong petro
1237	34.60		17.0	10.5	6.93	451.5	0.75	-101.5	0.67	odor in
1242	34.60		21.0	10.5	6.93	450.9	0.79	-104.0	1.00	water
1245	Sample time									

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-11	1245	EPH PCBs	H_2SO_4 —	MDEP-EPH SW-8082	

Samples Analyzed by: Lab Name: Energy Labs

NewFields Perspective. Vision. Solutions.	Project: Stinson GW Sampling	Personnel:
	Project # 350.0033.007	H. Groton
	Date/Time: Dec. 13, 2016	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-13R		Measuring Point (mp) TOC	(+GS)
Well Type: monitoring well	Total Depth: 60.05 (bgs / bmp)	Casing Type: PVC	
SWL before purging: 34.63 (bgs / bmp)	SWL post purge: 34.96 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Steel stickup

Purge & Sampling Equipment: YSI + Lamotte Turbidity

Pump Type: Submersible Whale	Pump Depth: ~43	( )	bgs / bmp
Purging Method: Low Flow	Sampling Method: Low Flow		$1ft^3$ = 7.48 gal
1 Casing Vol: ~4 gallons	3 Casing Vol: 12 gallons	Total Vol. Removed:	

Instrument Calibration: See Calibration Sheet on Dec 13, 2016

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
Guidelines/Goals	<0.3'	0.1-0.5	---	± 3%	± 0.1	± 3%	± 10%	± 10mV	± 10% or <10NTU	Note: Refer to SOP-12 A-C
1050	34.63									
1100	Begin Purging									
1105	34.88		4.0	9.6	6.96	296.4	0.37	-75.0	0.98	
1110	34.90		9.0	9.7	6.91	296.5	0.34	-76.7	0.43	
1115	34.90		15.0	9.7	6.89	296.5	0.35	-80.1	1.00	
1120	34.90		18.0	9.7	6.88	296.6	0.43	-81.9	0.32	
1125	34.90		23.0	9.8	6.88	296.6	0.63	-83.9	1.33	
1127	Sample time									

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-13R	1127	EPH	H_2SO_4	MDEP-EPH	—
		PCBs	—	SW-8082	—

Samples Analyzed by:	Lab Name: Energy Labs

NewFields Perspective. Vision. Solutions	Project: Stimson GW Sampling	Personnel:
	Project # 350.0033.007	HGrotto
	Date/Time: Dec 12, 2016	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-19		Measuring Point (mp) TOC	(+GS)
Well Type: Monitoring well	Total Depth: 53.68 (bgs / bmp)	Casing Type: PVC	
SWL before purging: 48.41 (bgs / bmp)	SWL post purge: 48.43 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Steel Stick up

Purge & Sampling Equipment

Pump Type: Submersible Whale	Pump Depth: ~50' btoc ( )	bgs / bmp
Purging Method: Low Flow	Sampling Method: Low Flow	1 ft^3 = 7.48 gal
1 Casing Vol: 0.85 gallons	3 Casing Vol: 2.5 gallons	Total Vol. Removed:

Instrument Calibration

	Model/Unit #	Buffer Soln 1	Buffer Soln 2	Field Temp. (°C)	Instrument Rdg.	Comments
pH						
Specific Cond.						
Redox	See calibration sheet on Dec. 12, 2016					
ORP						
DO		Salinity %:	Pressure (mmHg):			

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
1255	48.41									
1258	Begin Purging									
1302	48.43	-	4.0	9.2	7.38	367.5	2.66	-61.3	1232	AU
1307	48.43		10.0	9.5	7.39	361.2	3.24	-17.3	90.4	NTU
1312	48.43	1	15.0	9.6	7.35	361.2	3.23	-5.1	21.9	
1317	48.43	1	20.0	9.5	7.35	361.0	3.25	4.0	7.07	
1322	48.43	1	25	9.5	7.35	361.2	3.23	10.8	3.34	
1327	48.43	1	30	9.4	7.32	360.8	3.29	18.9	9.77	
1332	48.43	1	35	9.6	7.34	361.7	3.22	23.9	7.56	
1335	Sample time									

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-19	1335	EPH	H_2SO_4	MDEP-EPH	—
		PCBs	—	SW 8082	—

Samples Analyzed by:	Lab Name: Energy Labs

NewFields Perspective. Vision. Solutions.	Project: Stimson GW	Personnel:
	Project # 350.0033.007	H. Grotbo
	Date/Time: Dec. 12, 2016	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-20		Measuring Point (mp) BTOC	(+GS)
Well Type: monitoring well	Total Depth: 52.85 (bgs / bmp)	Casing Type: PVC	
SWL before purging: 48.41 (bgs / bmp)	SWL post purge: 48.43 (bgs / bmp)	Well Diameter: 2" ( )	
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Steel stickup

Purge & Sampling Equipment: _____

Pump Type: Submersible Whale 60'	Pump Depth: ~50' ( )	bgs / bmp
Purging Method: Low Flow	Sampling Method: Low Flow	$1ft^3$ = 7.48 gal
1 Casing Vol: 0.72 gallons	3 Casing Vol: 2.2 gallons	Total Vol. Removed:

Instrument Calibration: See Calibration Sheet on Dec. 12, 2016

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
Guidelines/Goals	<0.3'	0.1-0.5	---	± 3%	± 0.1	± 3%	± 10%	± 10mV	± 10% or <10NTU	Note: Refer to SOP-12 A-C
1044	48.41									
1100	Begin Purging									
1104	48.42		1.50	10.0	7.20	438.8	0.86	23.4	54.9	
1109	48.42		4.0	10.1	7.14	426.3	0.45	19.6	20.9	
1114	48.42		7.0	10.2	7.11	422.6	0.29	15.8	12.4	
1119	48.42		9.0	10.4	7.14	422.0	0.46	13.2	10.64	
1124	48.43		14.0	10.0	7.09	428.9	0.15	18.8	3.28	
1129	48.43		18.5	10.0	7.08	432.2	0.12	21.1	1.49	
1134	48.43		21.0	10.0	7.07	433.8	0.18	21.8	1.22	
1139	48.43		24.5	10.0	7.07	434.4	0.23	21.9	1.13	
1140	Sample time									

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-20	1140	EPH	H_2SO_4	MDEP-EPH-98	
		PCBs	—	SW-8082	

Samples Analyzed by: Lab Name: Energy Labs

11/11

NewFields
Perspective. Vision. Solutions.

Project: Stimson GW Sampling
Project # 350.0033.007
Date/Time: Dec. 12, 2016 1634

Personnel: H. Grotto

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-21
Measuring Point (mp) TOC (+GS)
Well Type: monitoring well
Total Depth: 53.02 (bgs / bmp)
Casing Type: PVC
SWL before purging: 49.63 (bgs / bmp)
SWL post purge: 49.65 (bgs / bmp)
Well Diameter: 2" ( )
Well Locked: Y / N
Cap/lid: Y / N
Photos taken: Y / N
Monument Type: Steel Stickup

Purge & Sampling Equipment: YSI / Lamotte Turbidity

Pump Type: Submersible - 60' Whale
Pump Depth: 51' ( ) bgs / bmp
Purging Method: Low Flow
Sampling Method: Low Flow
$1ft^3 = 7.48$ gal
1 Casing Vol:
3 Casing Vol:
Total Vol. Removed:

Instrument Calibration: See Calibration Sheet on Dec. 12, 2016

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
Guidelines/Goals	<0.3'	0.1-0.5	---	± 3%	± 0.1	± 3%	± 10%	± 10mV	± 10% or <10NTU	Note: Refer to SOP-12 A-C
1637	49.63									
1643	Begin Purging									
1645	49.65	-	3.0	9.4	7.24	474.2	4.32	-1.9	7.91	
1650	49.65		10.0	9.6	7.23	452.7	3.74	2.7	22.6	
1655	49.65		15.0	9.7	7.21	452.9	3.79	10.1	8.13	
1700	49.65		21.0	9.8	7.21	445.0	3.59	13.1	3.56	
1705	49.65		25.0	9.8	7.20	444.3	3.45	18.6	2.78	
1710	49.65		29.0	9.7	7.19	444.8	3.49	21.8	3.27	
1715	49.65		33.0	9.7	7.20	443.9	3.43	25.0	4.27	
1720	Sample time									

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-21	1720	EPH	H_2SO_4	MDEP-EPH	-
		PCBs	-	SW-8082	-

Samples Analyzed by: Lab Name: EnergyLabs

NewFields Perspective. Vision. Solutions.	Project: Stimson GW Sampling	Personnel:
	Project # 350.0033.007	H. Grotbo
	Date/Time: Dec. 13, 2016	

Groundwater Sampling and/or Development Field Form

Well ID/Sample Location: MW-23		Measuring Point (mp) TOC	(+GS)
Well Type: monitoring well	Total Depth: 61.50 (bgs / bmp)	Casing Type: PVC	
SWL before purging: 44.88 (bgs / bmp)	SWL post purge: 44.88 (bgs / bmp)	Well Diameter: 2"	( )
Well Locked: Y / N	Cap/lid: Y / N	Photos taken: Y / N	Monument Type: Steel Stick up

Purge & Sampling Equipment: YSI / Lamotte Turbidity

Pump Type: Submersible whale	Pump Depth: ~50 ( )	bgs / bmp
Purging Method: Low Flow	Sampling Method: Low Flow	$1ft^3$ = 7.48 gal
1 Casing Vol: 2.7 gallons	3 Casing Vol: 8.1 gallons	Total Vol. Removed:

Instrument Calibration: See Calibration Sheet on Dec. 13, 2016

Well Evacuation & Monitoring Data

Time	DTW (bmp)	Purge Rate (L/min)	Purge Vol. (L)	Temp (°C)	pH	SC (µS/cm)	DO (mg/L)	ORP (mV)	Turb (NTU)	Comments
Guidelines/Goals	<0.3'	0.1-0.5	---	± 3%	± 0.1	± 3%	± 10%	± 10mV	± 10% or <10NTU	Note: Refer to SOP-12 A-C
0938	44.88									
0947	Begin Purging									
0950	44.88		5.0	9.1	6.78	372.1	1.68	49.3	14.5	
0955	44.90		9.0	9.5	6.74	372.8	1.04	42.2	7.77	
1000	44.90		13.0	9.5	6.72	373.4	0.70	37.6	4.33	
1005	44.90		15.0	9.5	6.71	373.0	0.53	34.8	2.20	
1010	44.90		19.0	9.5	6.71	372.6	0.41	31.6	1.71	
1015	44.90		23.0	9.6	6.73	373.4	0.42	27.0	1.67	
1020	44.90		26.0	9.5	6.73	371.5	0.62	24.0	0.91	
1022	Sample time									

Sampling Data

Bottle Label	Sample Time	Sampling Parameter(s)	Preservative	Method	Other
MW-23	1022	EPH	H_2SO_4	MDEP-EPH	
		PCBs	–	SW-8082	

Samples Analyzed by: Lab Name: Energy Labs

Field Calibration Sheet

NewFields
Perspective. Vision. Solutions.

Project Name: Stimson GW monitoring **Project Number:** 350.0033.007

Date: 12/12/2016
Equipment Type: Multi-meter
Manufacturer YSI / GeoTech
Model Number: Professional Series **Serial Number:**

Calibration (as necessary, minimum twice per day): Time: 0735

Calibration #1 Temp at 19.3°C 0827
Calibration Standard: pH 4.01, 7.03, 10.07
Instrument Reading: pH 3.99 7.13; 10.07

Calibration #2 Temp Adjusted. Time: 0834
Calibration Standard: Conductivity 1260 µS/cm (1413 µS/cm - Standard)
Instrument Reading: 1261 µS/cm

Calibration #3 Temp Adjusted to 18°F Time: 0836
Calibration Standard: ORP 224.0
Instrument Reading:

Calibration #4 Time: 0843
Calibration Standard: DO% Baro: 676 mmHg; Sal: 0.0ppt 17.1°C
Instrument Reading: 88.5% pre cal - 88.5% post cal.

Date of Last Calibration NA Date(s) Instruments Used: NA

Name of person(s) who calibrated instruments: D.L. Spencer

Calibration Standards Used:

1. pH 4, 7, 10
2. Cond 1413 µS/cm
3. ORP
4. DO

Source of Calibration Standards: Wet lab.

Turbidity Calibration (NTU):

Standard ~~0.02~~ 1.0 Results: 0.91 NTU
Standard ~~10~~ 10.0 Results: 10.05 NTU
Standard ~~1000~~ 100.0 Results: 100.0 NTU

Misc. Comments: LaMotte Turbidity meter

Calibrated By: H. Gnotto

Field Calibration Sheet

NewFields
Perspective. Vision. Solutions.

Project Name: Stimson GW Sampling **Project Number:** 350.0033.007

Date: December 13, 2016
Equipment Type: YSI / Lamotte Turbidity
Manufacturer YSI / Lamotte
Model Number: Professional Series **Serial Number:**

Calibration (as necessary, minimum twice per day): Time: 830

Calibration #1 Temp at 19.6°C
Calibration Standard: pH 4.00, 7.03 - 10.05
Instrument Reading: pH 3.98; 7.02; 10.04

Calibration #2 Time: 835
Calibration Standard: Cond. 1413 µS/cm Temp Adjusted to: 1251.0 µS/cm
Instrument Reading: 1250 µS/cm

Calibration #3 Time: 838
Calibration Standard: ORP · 224.0
Instrument Reading: ORP: 223.9

Calibration #4 Time: 845
Calibration Standard: DO% Barometer: 603.0 mmHg Temp: 17.6°C
Instrument Reading: precal: 80.5% post cal: 80.3%

Date of Last Calibration 12/12/16 Date(s) Instruments Used: 12/12/16

Name of person(s) who calibrated instruments: H. Grotto

Calibration Standards Used:

1. pH 4, 7, 10
2. Cond. 1413 µS/cm
3. ORP
4. DO%

Source of Calibration Standards: WetLab

Turbidity Calibration (NTU):

Standard ~~0.02~~ 1.0 Results: 0.99 NTU
Standard ~~10~~ 10.0 Results: 10.10 NTU
Standard ~~1000~~ 100.0 Results: 100.5 NTU

Misc. Comments:

Calibrated By: H. Grotto

DAILY FIELD RECORD

Page 1 of 2

NewFields
Perspective. Vision. Solutions.

Project and Task Number: 350.0033.007	Date: Dec.12,2016
Project Name: Stimson GW Sampling	Field Activity: GW Sampling
Location: Bonner, MT	Weather: 37°F; overcast

Personnel: Name	Company	Time in	Time Out
H. Grotto	NewFields	0715	1815
K. Large	DEQ - MT	1125	1135
K. Large	DEQ - MT	1415	1500

PERSONAL SAFETY CHECKLIST

—	Steel-toed boots	—	Hard Hat	α	Traffic Vest
α	Gloves	α	Safety Goggles	—	Ear Protection

TIME	DESCRIPTION OF WORK PERFORMED
0715	HG at office; loads equipment into vehicle.
	→ attempts to calibrate Hanna multi-meter.; replace ORP + pH probe; still can't get meter to register pH calibration, troubleshoot
0827	Calibrate YSI instead - cals good. See calibration sheet
	Calibrate turbidity meter
	→ continue to load equipment for field work...
0930	mob from office to Bonner
0945	On site; set up at MW-21
0955	Tag DTW at MW-21 at 49.63' btoc TD = 53.02' btoc
	Set submersible pump at 51' btoc
1005	Begin purging. — unable to bring water to the surface.
	* troubleshoot: using different control boxes
1015	HG calls T. Etzel & L. McKay; HG uses truck battery to try to purge — no water makes it to the surface.
	Per. T. Etzel: Keep moving onto next wells using truck battery to run pumps. MW-21 might not be sampleable this month w/ such low water. Or I will try bladder pump on the well.
1035	HG unable to purge MW-21 — HG moves to MW-20
	→ Decon Water level tape using: Liquinox; 10% Nitric; 10% methanol; Distilled Water
1044	Tag DTW at MW-20 @ 48.41' btoc TD = 52.85' btoc
	→ Set pump at 50' btoc
1100	Begin purging well using the truck battery

DAILY FIELD RECORD

NewFields
Perspective. Vision. Solutions.

Date: Dec 12, 2016

TIME	DESCRIPTION OF WORK PERFORMED
1135	Keith Large onsite - check in on sampling
	→ continue to purge MW-20
1135	KL off site ; will check in again later
1140	Sample time at MW-20
	→ Post DTW: 48.43' btoc
	→ Decon both submersible pumps using Liquinox ; 10% Nitric ; 10% methanol ; distilled water from Culligan
	→ Decon WLT
	→ move to MW-19
1255	Tag DTW at MW-19 at 48.41' btoc ; TD = 53.68' btoc
1258	Begin Purging MW-19 off truck battery
1335	Sample time at MW-19
	→ Decon WLT
1408	Tag DTW at MW-10 at 41.53' btoc : TD = 52.35' btoc
1410	Install whale pump.
	→ unable to get the pump to work
1415	K. Large back onsite ; remove faulty pump & install working submersible pump
1432	Begin purging MW-10
1500	Sample time at MW-10 ; DTW post sample : 41.54' btoc
	→ Decon WLT & pump (working pump) ; KL offsite
1530	→ mob to MW-15R
1540	Tag DTW at MW-15R at 43.28' btoc TD: 58.80' btoc
1544	Begin Purging MW-15R
1615	Sample time at MW-15R ; post sample DTW: 43.37' btoc
	→ Decon WLT & sub. pump. ; mob to MW-21
1637	Tag DTW at MW-21 @ 49.63 ; TD = 53.02' btoc.
1643	Begin purging well using working submersible pump. ; snowing heavily
1720	Sample time at MW-21 ; post DTW: 49.65' btoc
	→ pack equipment in truck
1730	Demob from site
1750	Unload truck (sensitive temp. equipment)
1815	Done for the Day

Heather Ferguson

DAILY FIELD RECORD

Page 1 of 2

NewFields
Perspective. Vision. Solutions.

Project and Task Number: Stimson GW	Date: Dec. 13, 2016
Project Name: 350.0033.007	Field Activity: GW Sampling
Location: Bonner - MT	Weather: 26°F; overcast

Personnel: Name	Company	Time in	Time Out
H. Grotbo	NewFields	0800	1700

PERSONAL SAFETY CHECKLIST

—	Steel-toed boots	—	Hard Hat	—	Traffic Vest
✓	Gloves	✓	Safety Goggles	—	Ear Protection

TIME	DESCRIPTION OF WORK PERFORMED
0800	HG decons submersible pump using: Alconox/Liquinox; 10% nitric Acid; 10% methanol; Culligan DI Water
	→ Decon WLT
	→ Load equipment into truck.
0830	Calibrate YSI & Turbidity meter
0915	Mob to the site
0930	HG onsite; set up on MW-23
0938	Tag DTW at MW-23 at 44.88; TD = 61.50' btoc
0947	Begin purging MW-23 (off truck Battery)
	→ Collect GPS point
1022	Sample time at MW-23
	→ Decon WLT & Pump (same methods as above).
1050	Tag DTW at MW-13R at 34.63' btoc; TD = 60.05' btoc
1100	Begin Purging Well.
1127	Sample time at MW-13R
	→ Decon WLT & Pump (same as above).
1150	Tag DTW at MW-11 at 34.60' btoc; TD = 53.00' btoc
1153	Send bailer down well to check free product status.
	No Free Product observed in Bailer
1215	Begin purging MW-11 (off truck battery)
	→ Slight sheen in purge water
	→ strong petro odor in water
1245	Sample time at MW-11.

DAILY FIELD RECORD

NewFields
Perspective. Vision. Solutions.

Date: 12/13/16

TIME	DESCRIPTION OF WORK PERFORMED
1255	Decon WLT ; pack up equipment in truck.
1305	Tag DTW at MW-14 at 37.71' btoc
1310	Demob to Missoula.
1325	Back at the office.
	Pack coolers for shipping ; fill out COCs ; ship coolers ;
	Decon field equipment
	Put field equipment away -
	Complete Notes.
1700	Done for the day
	Heather Gates

ENERGY LABORATORIES

Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information *(Billing information)*

Company/Name	NewFields
Contact	Tyler Etzel
Phone	(406) 549-8270
Mailing Address	1120 Cedar Street
City, State, Zip	Missoula MT 59802
Email	tetzel@newfields.com
Receive Invoice	☐ Hard Copy ☒ Email
Receive Report	☐ Hard Copy ☒ Email
Purchase Order	350.0033.007
Quote	
Bottle Order	107838

Report Information *(if different than Account Information)*

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report	☐ Hard Copy ☐ Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

* 2 Coolers associated with COC.

Project Information

Project Name, PWSID, Permit, etc.	Stimson Groundwater
Sampler Name	Heather Grotbo
Sampler Phone	(406) ~~556~~ 465 7661
Sample Origin State	MT
EPA/State Compliance	☐ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Analysis Requested

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	MDEP-EPH-98	SW-8082 PCBs								See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	MW-11	12/13/16	1245	3	W	X	X										
2	MW-13R	12/13/16	1127	3	W	X	X										
3	MW-19	12/12/16	1335	3	W	X	X										
4	MW-20	12/12/16	1140	3	W	X	X										
5	MW-21	12/12/16	1720	3	W	X	X										
6	MW-23	12/13/16	1022	3	W	X	X										
7																	
8																	
9																	
10																	

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Heather Grotbo	12/13/16 1600	Heather Grotbo			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number *(cash/check only)*

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

APPENDIX B

Analytical Laboratory Reports

ANALYTICAL SUMMARY REPORT

June 15, 2016

NewFields
1120 Cedar St
Missoula, MT 59802-3911

Work Order: B16060300

Project Name: Stimson GWM

Energy Laboratories Inc Billings MT received the following 6 samples for NewFields on 6/3/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B16060300-001	MW-11	06/02/16 14:10	06/03/16	Aqueous	EPH-Liquid-Liquid Extraction EPH Fractionation Hydrocarbons, Aliphatic Extractable Petroleum Hydrocarbons, Aromatic Extractable Petroleum Hydrocarbons, Extractable Petroleum Screen Polychlorinated Biphenyls (PCB's) Separatory Funnel Liquid Liquid Ext.
B16060300-002	MW-13R	06/02/16 10:55	06/03/16	Aqueous	EPH-Liquid-Liquid Extraction Hydrocarbons, Extractable Petroleum Screen Polychlorinated Biphenyls (PCB's) Separatory Funnel Liquid Liquid Ext.
B16060300-003	MW-19	06/02/16 9:08	06/03/16	Aqueous	Same As Above
B16060300-004	MW-20	06/02/16 8:10	06/03/16	Aqueous	Same As Above
B16060300-005	MW-21	06/01/16 15:05	06/03/16	Aqueous	Same As Above
B16060300-006	MW-23	06/01/16 14:00	06/03/16	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: NewFields
Project: Stimson GWM
Work Order: B16060300

Report Date: 06/15/16

CASE NARRATIVE

Fractionation without PAHs was added to the following sample(s) per email from Tyler Etzel on 6/9/16:

B16060300-001 MW-11

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM
Lab ID: B16060300-001
Client Sample ID: MW-11

Report Date: 06/15/16
Collection Date: 06/02/16 14:10
DateReceived: 06/03/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	1420	ug/L	*	300	1000	SW8015M	06/08/16 13:59 / tmc
Surr: o-Terphenyl	91.0	%REC		40-140		SW8015M	06/08/16 13:59 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	ND	ug/L		300	1000	MA-EPH	06/10/16 19:55 / mdw
C19 to C36 Aliphatics	1030	ug/L	*	300	1000	MA-EPH	06/10/16 19:55 / mdw
Surr: 1-Chloro-octadecane	75.0	%REC		40-140		MA-EPH	06/10/16 19:55 / mdw
C11 to C22 Aromatics	ND	ug/L		300	1000	MA-EPH	06/10/16 20:38 / mdw
Total Extractable Hydrocarbons	1170	ug/L	*	300	1000	MA-EPH	06/10/16 20:38 / mdw
Surr: 2-Bromonaphthalene	69.0	%REC		40-140		MA-EPH	06/10/16 20:38 / mdw
Surr: 2-Fluorobiphenyl	66.0	%REC		40-140		MA-EPH	06/10/16 20:38 / mdw
Surr: o-Terphenyl	92.0	%REC		40-140		MA-EPH	06/10/16 20:38 / mdw
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	06/06/16 17:44 / jem
Surr: Decachlorobiphenyl	71.0	%REC		44-130		SW8082A	06/06/16 17:44 / jem
Surr: Tetrachloro-m-xylene	73.0	%REC		40-110		SW8082A	06/06/16 17:44 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM
Lab ID: B16060300-002
Client Sample ID: MW-13R

Report Date: 06/15/16
Collection Date: 06/02/16 10:55
DateReceived: 06/03/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		300	1000	SW8015M	06/08/16 16:57 / tmc
Surr: o-Terphenyl	89.0	%REC		40-140		SW8015M	06/08/16 16:57 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	06/06/16 18:13 / jem
Surr: Decachlorobiphenyl	99.0	%REC		44-130		SW8082A	06/06/16 18:13 / jem
Surr: Tetrachloro-m-xylene	72.0	%REC		40-110		SW8082A	06/06/16 18:13 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM
Lab ID: B16060300-003
Client Sample ID: MW-19

Report Date: 06/15/16
Collection Date: 06/02/16 09:08
DateReceived: 06/03/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		300	1000	SW8015M	06/08/16 17:42 / tmc
Surr: o-Terphenyl	93.0	%REC		40-140		SW8015M	06/08/16 17:42 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	06/06/16 18:41 / jem
Surr: Decachlorobiphenyl	94.0	%REC		44-130		SW8082A	06/06/16 18:41 / jem
Surr: Tetrachloro-m-xylene	72.0	%REC		40-110		SW8082A	06/06/16 18:41 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM
Lab ID: B16060300-004
Client Sample ID: MW-20

Report Date: 06/15/16
Collection Date: 06/02/16 08:10
DateReceived: 06/03/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		303	1000	SW8015M	06/08/16 22:09 / tmc
Surr: o-Terphenyl	96.0	%REC		40-140		SW8015M	06/08/16 22:09 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	06/06/16 19:09 / jem
Surr: Decachlorobiphenyl	96.0	%REC		44-130		SW8082A	06/06/16 19:09 / jem
Surr: Tetrachloro-m-xylene	76.0	%REC		40-110		SW8082A	06/06/16 19:09 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM
Lab ID: B16060300-005
Client Sample ID: MW-21

Report Date: 06/15/16
Collection Date: 06/01/16 15:05
DateReceived: 06/03/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		300	1000	SW8015M	06/08/16 18:27 / tmc
Surr: o-Terphenyl	88.0	%REC		40-140		SW8015M	06/08/16 18:27 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	06/06/16 19:37 / jem
Surr: Decachlorobiphenyl	91.0	%REC		44-130		SW8082A	06/06/16 19:37 / jem
Surr: Tetrachloro-m-xylene	73.0	%REC		40-110		SW8082A	06/06/16 19:37 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM
Lab ID: B16060300-006
Client Sample ID: MW-23

Report Date: 06/15/16
Collection Date: 06/01/16 14:00
DateReceived: 06/03/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	380	ug/L		300	1000	SW8015M	06/08/16 20:40 / tmc
Surr: o-Terphenyl	92.0	%REC		40-140		SW8015M	06/08/16 20:40 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	06/06/16 20:05 / jem
Surr: Decachlorobiphenyl	100	%REC		44-130		SW8082A	06/06/16 20:05 / jem
Surr: Tetrachloro-m-xylene	69.0	%REC		40-110		SW8082A	06/06/16 20:05 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M									Batch: 99870
Lab ID: LCS-99870	Laboratory Control Sample				Run: GCFID-HP3-B_160606B				06/08/16 12:30
Total Extractable Hydrocarbons	6070	ug/L	300	98	60	140			
Surr: o-Terphenyl				96	40	140			
Lab ID: MB-99870	Method Blank				Run: GCFID-HP3-B_160606B				06/08/16 13:14
Total Extractable Hydrocarbons	ND	ug/L	300						
Surr: o-Terphenyl				89	40	140			
Lab ID: B16060300-001BMS	Sample Matrix Spike				Run: GCFID-HP3-B_160606B				06/08/16 14:43
Total Extractable Hydrocarbons	11500	ug/L	570	86	60	140			
Surr: o-Terphenyl				87	40	140			
Lab ID: B16060300-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP3-B_160606B				06/08/16 15:28
Total Extractable Hydrocarbons	11600	ug/L	570	87	60	140	1.2	20	
Surr: o-Terphenyl				89	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M									Analytical Run: R262146
Lab ID: CCV_0606HP336r-W	Continuing Calibration Verification Standard								06/08/16 07:19
n-Nonane	210	ug/L		105	75	125			
n-Decane	209	ug/L		104	75	125			
n-Dodecane	212	ug/L		106	75	125			
n-Tetradecane	204	ug/L		102	75	125			
n-Hexadecane	211	ug/L		105	75	125			
n-Octadecane	209	ug/L		105	75	125			
n-Nonadecane	211	ug/L		106	75	125			
n-Eicosane	210	ug/L		105	75	125			
n-Docosane	208	ug/L		104	75	125			
n-Tetracosane	208	ug/L		104	75	125			
n-Hexacosane	209	ug/L		105	75	125			
n-Octacosane	197	ug/L		98	75	125			
n-Triacontane	209	ug/L		105	75	125			
n-Hexatriacontane	211	ug/L		105	75	125			
Surr: o-Terphenyl				106	75	125			
Lab ID: CCV_0606HP348r-W	Continuing Calibration Verification Standard								06/08/16 19:11
n-Nonane	210	ug/L		105	75	125			
n-Decane	209	ug/L		104	75	125			
n-Dodecane	212	ug/L		106	75	125			
n-Tetradecane	205	ug/L		103	75	125			
n-Hexadecane	211	ug/L		106	75	125			
n-Octadecane	210	ug/L		105	75	125			
n-Nonadecane	212	ug/L		106	75	125			
n-Eicosane	211	ug/L		105	75	125			
n-Docosane	209	ug/L		105	75	125			
n-Tetracosane	209	ug/L		104	75	125			
n-Hexacosane	210	ug/L		105	75	125			
n-Octacosane	198	ug/L		99	75	125			
n-Triacontane	210	ug/L		105	75	125			
n-Hexatriacontane	211	ug/L		106	75	125			
Surr: o-Terphenyl				106	75	125			

Qualifiers:

RL - Analyte reporting limit.

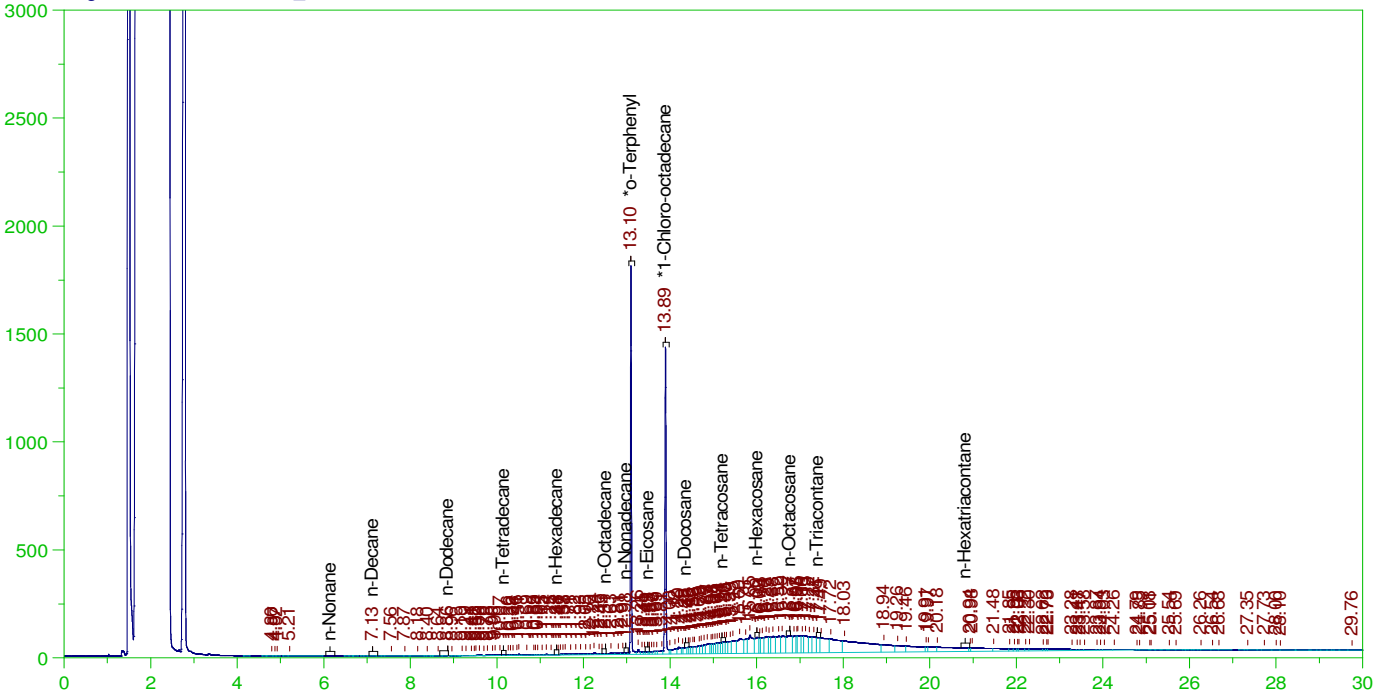
ND - Not detected at the reporting limit.

MW-11

Batch ID: 99870

G:\org\HP3\DAT\HP3060616_b\0606HP3.0041.RAW

B16060300-001B ;0606HP3 , $HC-EPH-SCRN-W, V41



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16060300-001B ;0606HP3 , $HC-EPH-SCRN-W, V41
Raw File: G:\org\HP3\DAT\HP3060616_b\0606HP3.0041.RAW
Date & Time Acquired: 6/8/2016 1:59:23 PM
Method File: g:\org\HP3\Methods\SR_SCN-060641-PD-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PD.CAL
Sample Weight: 1.03 Dilution: 2 S.A.: 1

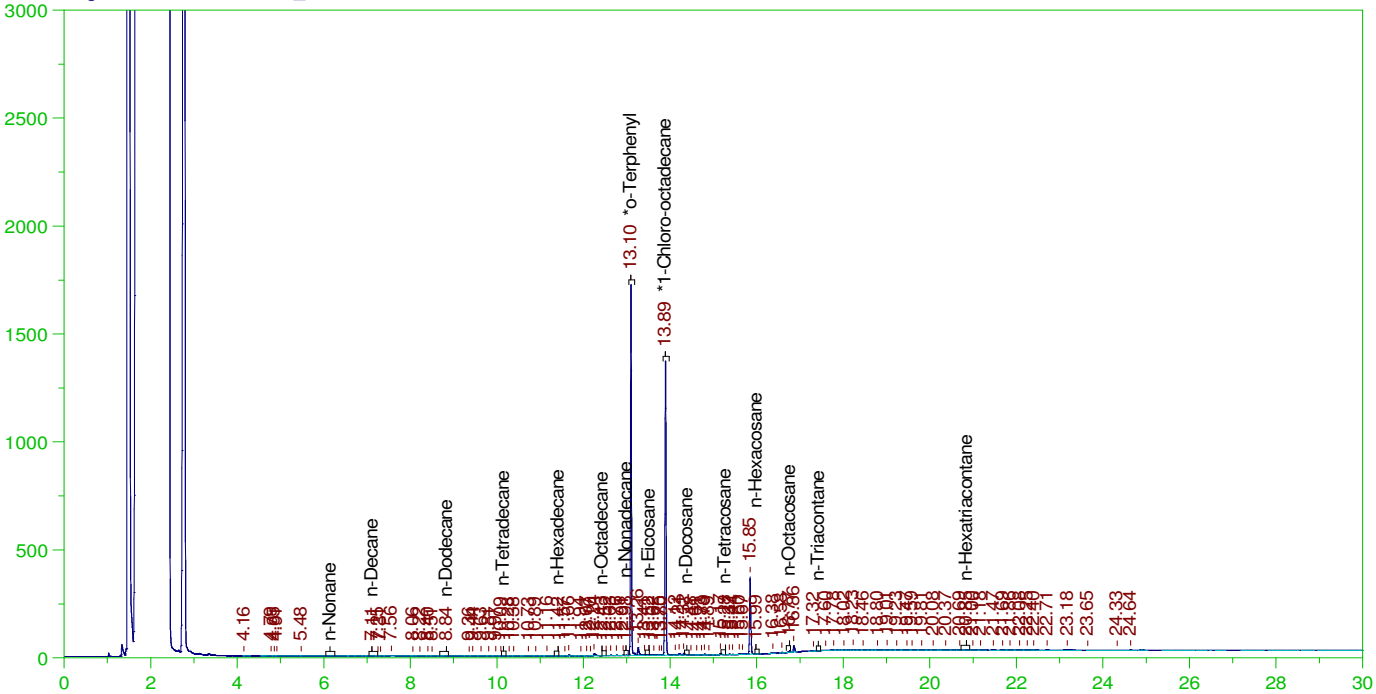
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 7.045 to 17.479
Rt range for C9 to C18 Hydrocarbons: 6.05 to 13.049
Rt range for C19 to C36 Hydrocarbons: 13.084 to 20.92

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.097	3042670	194.175	180.567	92.99	-
*1-Chloro-octadecane	13.89	2597521	194.175	194.03	99.93	-

DRO Area:1.297122E+07 DRO Amount: 853.6042
TEH Area:2.151784E+07 TEH Amount: 1416.036
C9-C18 Area:542539.9 C9-C18 Amount: 35.82288
C19-C36 Area:1.934949E+07C19-C36 Amount: 1269.103

MW-13R Batch ID: 99870

G:\org\HP3\DAT\HP3060616_b\0606HP3.0045.RAW B16060300-002B ;0606HP3 , $HC-EPH-SCRN-W, V45



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16060300-002B ;0606HP3 , $HC-EPH-SCRN-W, V45
Raw File: G:\org\HP3\DAT\HP3060616_b\0606HP3.0045.RAW
Date & Time Acquired: 6/8/2016 4:57:34 PM
Method File: g:\org\HP3\Methods\SR_SCN-PD-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PD.CAL
Sample Weight: 1.02 Dilution: 2 S.A.: 1

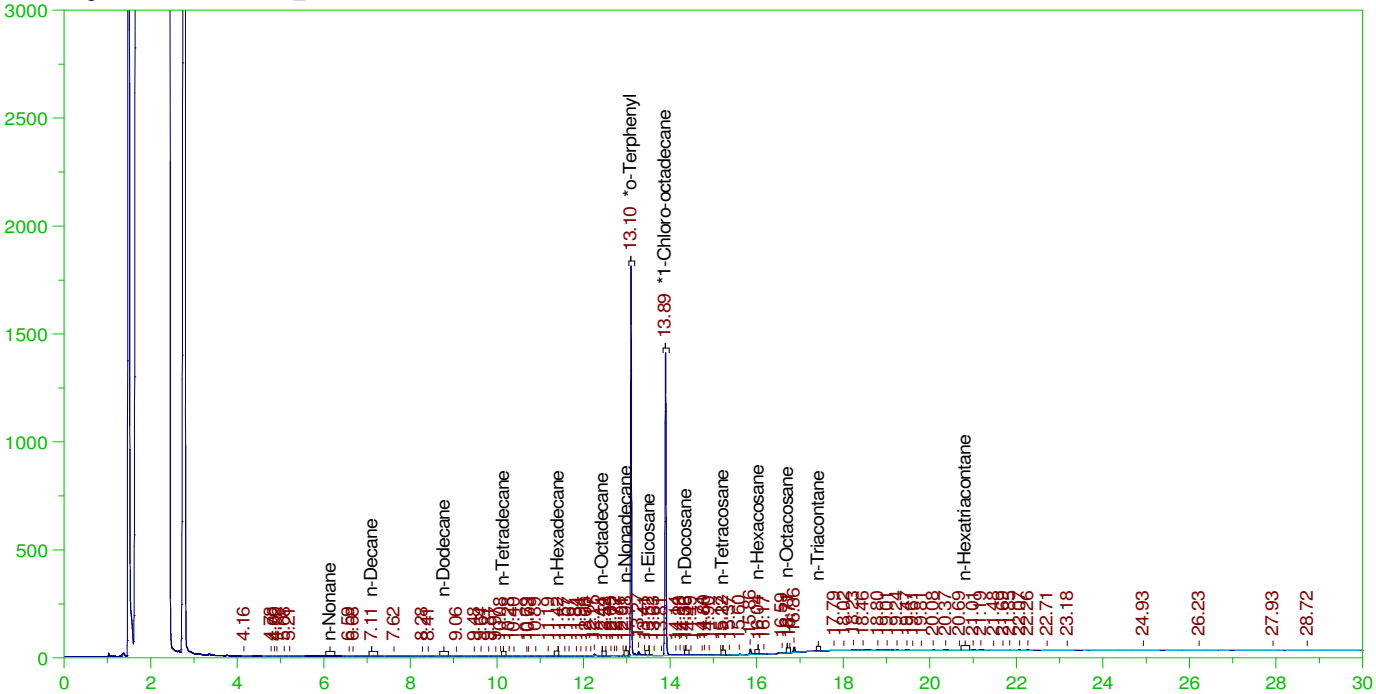
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 7.045 to 17.479
Rt range for C9 to C18 Hydrocarbons: 6.05 to 13.049
Rt range for C19 to C36 Hydrocarbons: 13.084 to 20.92

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.097	2912144	196.078	174.515	89.	-
*1-Chloro-octadecane	13.89	2444907	196.078	184.421	94.05	-

DRO Area:1179227 DRO Amount: 78.36285
TEH Area:1320025 TEH Amount: 87.71926
C9-C18 Area:171494.4 C9-C18 Amount: 11.43446
C19-C36 Area:1046700 C19-C36 Amount: 69.3245

MW-19 Batch ID: 99870

G:\org\HP3\DAT\HP3060616_b\0606HP3.0046.RAW B16060300-003B ;0606HP3 , $HC-EPH-SCRN-W, V46



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16060300-003B ;0606HP3 , $HC-EPH-SCRN-W, V46
Raw File: G:\org\HP3\DAT\HP3060616_b\0606HP3.0046.RAW
Date & Time Acquired: 6/8/2016 5:42:24 PM
Method File: g:\org\HP3\Methods\SR_SCN-PD-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PD.CAL
Sample Weight: 1.02 Dilution: 2 S.A.: 1

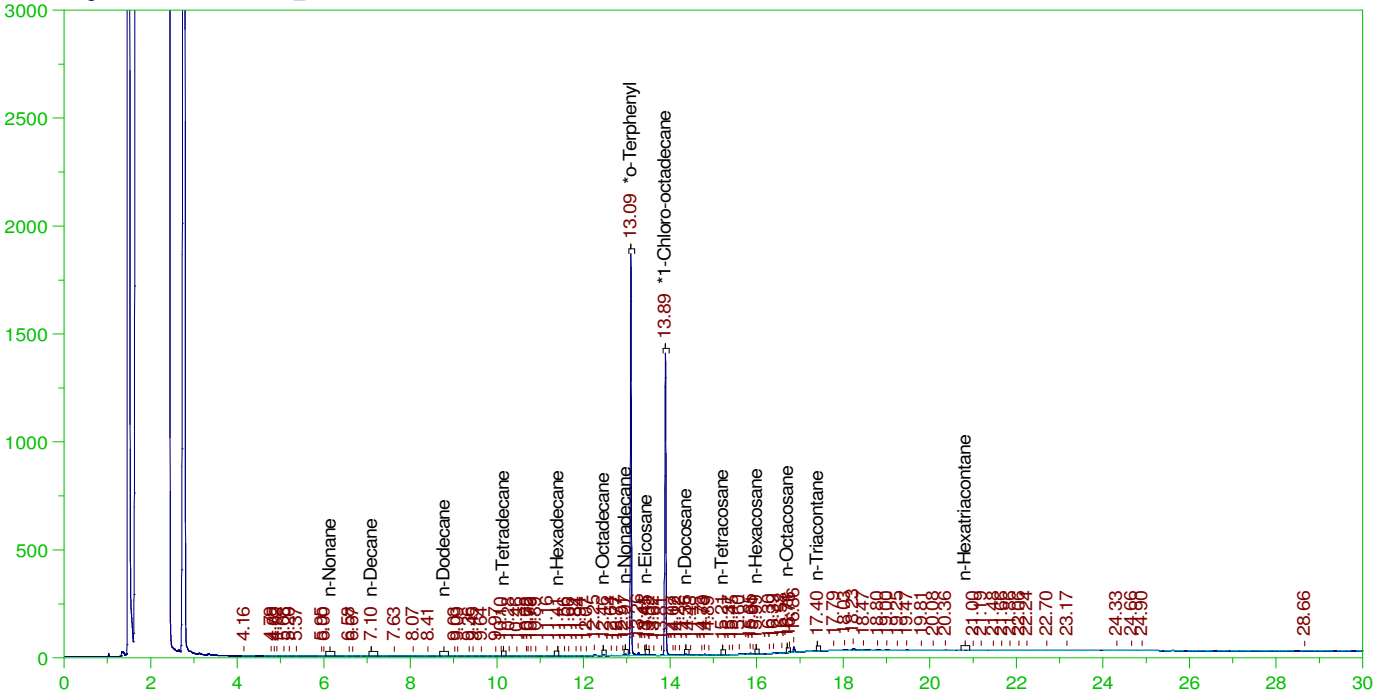
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 7.045 to 17.479
Rt range for C9 to C18 Hydrocarbons: 6.05 to 13.049
Rt range for C19 to C36 Hydrocarbons: 13.084 to 20.92

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.098	3049349	196.078	182.738	93.2	-
*1-Chloro-octadecane	13.891	2550840	196.078	192.411	98.13	-

DRO Area:359053.3 DRO Amount: 23.86006
TEH Area:504115.8 TEH Amount: 33.49986
C9-C18 Area:117953.3 C9-C18 Amount: 7.864589
C19-C36 Area:325788.8 C19-C36 Amount: 21.57747

MW-20 Batch ID: 99870

G:\org\HP3\DAT\HP3060616_b\0606HP3.0052.RAW B16060300-004B ;0606HP3 , $HC-EPH-SCRN-W, V52



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16060300-004B ;0606HP3 , $HC-EPH-SCRN-W, V52
Raw File: G:\org\HP3\DAT\HP3060616_b\0606HP3.0052.RAW
Date & Time Acquired: 6/8/2016 10:09:12 PM
Method File: g:\org\HP3\Methods\SR_SCN-PD-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PD.CAL
Sample Weight: 0.99 Dilution: 2 S.A.: 1

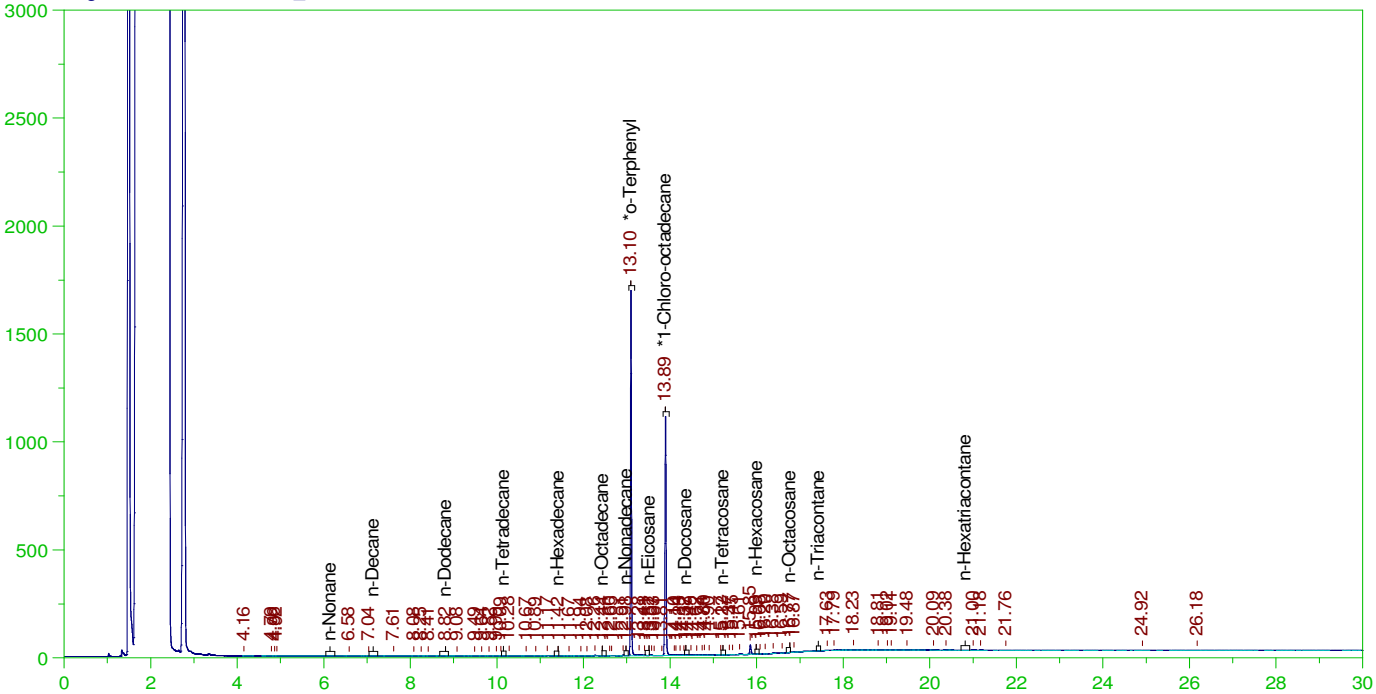
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 7.045 to 17.479
Rt range for C9 to C18 Hydrocarbons: 6.05 to 13.049
Rt range for C19 to C36 Hydrocarbons: 13.084 to 20.92

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.095	3152306	202.02	194.632	96.34	-
*1-Chloro-octadecane	13.888	2528398	202.02	196.498	97.27	-

DRO Area:375604 DRO Amount: 25.71626
TEH Area:539366 TEH Amount: 36.92846
C9-C18 Area:135008.6 C9-C18 Amount: 9.274539
C19-C36 Area:303675 C19-C36 Amount: 20.72232

MW-21 Batch ID: 99870

G:\org\HP3\DAT\HP3060616_b\0606HP3.0047.RAW B16060300-005B ;0606HP3 , $HC-EPH-SCRN-W, V47



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16060300-005B ;0606HP3 , $HC-EPH-SCRN-W, V47
Raw File: G:\org\HP3\DAT\HP3060616_b\0606HP3.0047.RAW
Date & Time Acquired: 6/8/2016 6:27:00 PM
Method File: g:\org\HP3\Methods\SR_SCN-PD-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PD.CAL
Sample Weight: 1.01 Dilution: 2 S.A.: 1

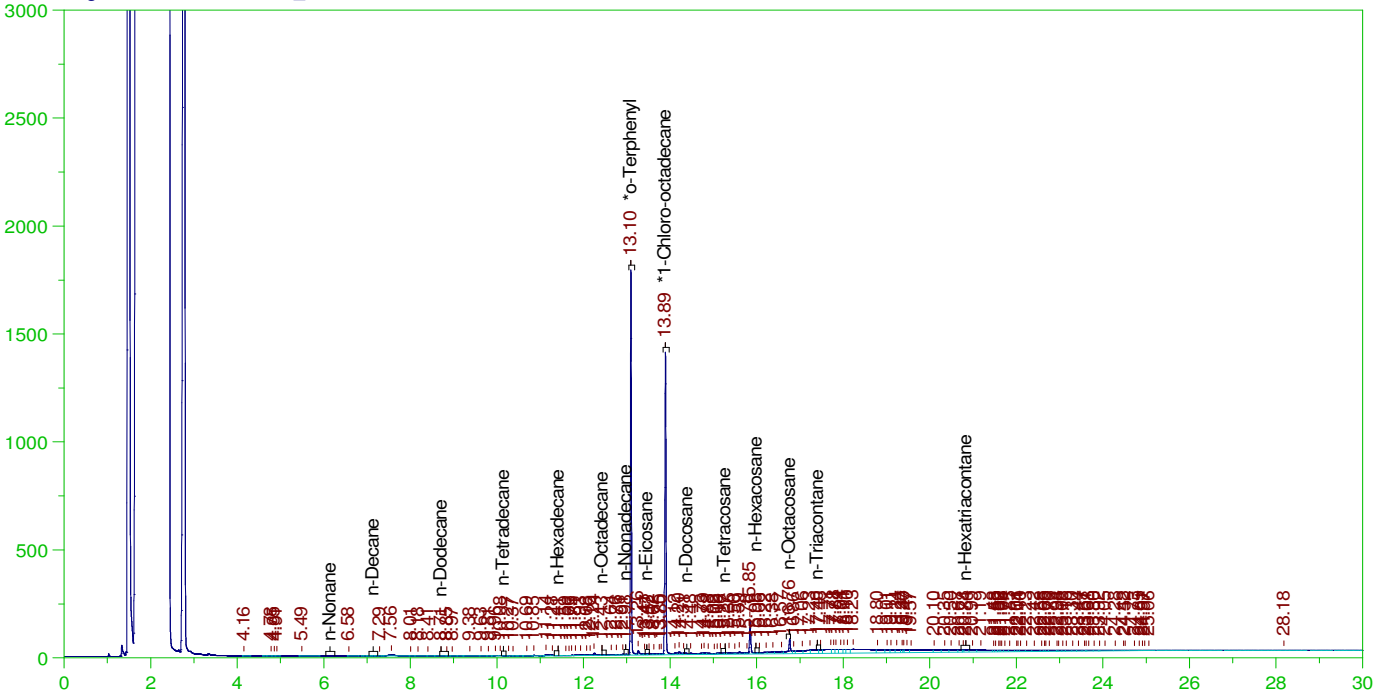
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 7.045 to 17.479
Rt range for C9 to C18 Hydrocarbons: 6.05 to 13.049
Rt range for C19 to C36 Hydrocarbons: 13.084 to 20.92

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.097	2883287	198.02	174.497	88.12	-
*1-Chloro-octadecane	13.89	2049834	198.02	156.151	78.86	-

DRO Area:315721.6 DRO Amount: 21.18829
TEH Area:451688.1 TEH Amount: 30.31309
C9-C18 Area:129415.1 C9-C18 Amount: 8.714239
C19-C36 Area:234955.1 C19-C36 Amount: 15.7155

MW-23 Batch ID: 99870

G:\org\HP3\DAT\HP3060616_b\0606HP3.0050.RAW B16060300-006B ;0606HP3 , $HC-EPH-SCRN-W, V50



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16060300-006B ;0606HP3 , $HC-EPH-SCRN-W, V50
Raw File: G:\org\HP3\DAT\HP3060616_b\0606HP3.0050.RAW
Date & Time Acquired: 6/8/2016 8:40:35 PM
Method File: g:\org\HP3\Methods\SR_SCN-060641-PD-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PD.CAL
Sample Weight: 1.05 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 7.045 to 17.479
Rt range for C9 to C18 Hydrocarbons: 6.05 to 13.049
Rt range for C19 to C36 Hydrocarbons: 13.084 to 20.92

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.096	3026178	190.476	176.168	92.49	-
*1-Chloro-octadecane	13.889	2537977	190.476	185.971	97.63	-

DRO Area:2154042 DRO Amount: 139.0522
TEH Area:5881973 TEH Amount: 379.7053
C9-C18 Area:310673.4 C9-C18 Amount: 20.12245
C19-C36 Area:4530544 C19-C36 Amount: 291.4913

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 99961
Lab ID: LCS-99961-99870	Laboratory Control Sample				Run: GCFID-HP4-B_160609D				06/10/16 17:04
C9 to C18 Aliphatics	830	ug/L	300	69	40	140			
C19 to C36 Aliphatics	1530	ug/L	300	96	40	140			
n-Nonane	74.0	ug/L	5.0	37	30	140			
n-Decane	103	ug/L	5.0	52	40	140			
n-Dodecane	122	ug/L	5.0	61	40	140			
n-Tetradecane	144	ug/L	5.0	72	40	140			
n-Hexadecane	164	ug/L	5.0	82	40	140			
n-Octadecane	180	ug/L	5.0	90	40	140			
n-Nonadecane	189	ug/L	5.0	95	40	140			
n-Eicosane	188	ug/L	5.0	94	40	140			
n-Docosane	191	ug/L	5.0	96	40	140			
n-Tetracosane	194	ug/L	5.0	97	40	140			
n-Hexacosane	196	ug/L	5.0	98	40	140			
n-Octacosane	179	ug/L	5.0	90	40	140			
n-Triacontane	194	ug/L	5.0	97	40	140			
n-Hexatriacontane	187	ug/L	5.0	93	40	140			
Surr: 1-Chloro-octadecane			5.0	82	40	140			
Lab ID: MB-99961-99870	Method Blank				Run: GCFID-HP4-B_160609D				06/10/16 18:30
C9 to C18 Aliphatics	ND	ug/L	300						
C19 to C36 Aliphatics	ND	ug/L	300						
Surr: 1-Chloro-octadecane			5.0	85	40	140			
Lab ID: B16060300-001BMS	Sample Matrix Spike				Run: GCFID-HP4-B_160609D				06/10/16 21:21
C9 to C18 Aliphatics	1660	ug/L	570	73	40	140			
C19 to C36 Aliphatics	3110	ug/L	570	69	40	140			
n-Nonane	147	ug/L	5.0	39	30	140			
n-Decane	210	ug/L	5.0	56	40	140			
n-Dodecane	245	ug/L	5.0	65	40	140			
n-Tetradecane	294	ug/L	5.0	78	40	140			
n-Hexadecane	332	ug/L	5.0	88	40	140			
n-Octadecane	364	ug/L	5.0	97	40	140			
n-Nonadecane	383	ug/L	5.0	101	40	140			
n-Eicosane	381	ug/L	5.0	101	40	140			
n-Docosane	388	ug/L	5.0	103	40	140			
n-Tetracosane	394	ug/L	5.0	104	40	140			
n-Hexacosane	396	ug/L	5.0	105	40	140			
n-Octacosane	364	ug/L	5.0	97	40	140			
n-Triacontane	393	ug/L	5.0	104	40	140			
n-Hexatriacontane	382	ug/L	5.0	101	40	140			
Surr: 1-Chloro-octadecane			9.4	92	40	140			
Lab ID: B16060300-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_160609D				06/10/16 22:45
C9 to C18 Aliphatics	1780	ug/L	570	79	40	140	6.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 99961
Lab ID: B16060300-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_160609D			06/10/16 22:45	
C19 to C36 Aliphatics	3240	ug/L	570	73	40	140	4.2	20	
n-Nonane	161	ug/L	5.0	43	30	140	9.3	30	
n-Decane	229	ug/L	5.0	61	40	140	9.0	20	
n-Dodecane	266	ug/L	5.0	70	40	140	8.1	20	
n-Tetradecane	314	ug/L	5.0	83	40	140	6.7	20	
n-Hexadecane	351	ug/L	5.0	93	40	140	5.5	20	
n-Octadecane	384	ug/L	5.0	102	40	140	5.2	20	
n-Nonadecane	401	ug/L	5.0	106	40	140	4.8	20	
n-Eicosane	397	ug/L	5.0	105	40	140	4.3	20	
n-Docosane	403	ug/L	5.0	107	40	140	4.0	20	
n-Tetracosane	410	ug/L	5.0	109	40	140	3.9	20	
n-Hexacosane	412	ug/L	5.0	109	40	140	3.9	20	
n-Octacosane	379	ug/L	5.0	100	40	140	4.0	20	
n-Triacontane	409	ug/L	5.0	108	40	140	4.0	20	
n-Hexatriacontane	400	ug/L	5.0	106	40	140	4.4	20	
Surr: 1-Chloro-octadecane			9.4	98	40	140			
Lab ID: LCS-99961-99870	Laboratory Control Sample				Run: GCFID-HP4-B_160609D			06/10/16 17:46	
C11 to C22 Aromatics	3310	ug/L	300	97	40	140			
Total Extractable Hydrocarbons	5740	ug/L	300	93	40	140			
Naphthalene	105	ug/L	5.0	52	40	140			
2-MethylNaphthalene	116	ug/L	5.0	58	40	140			
Acenaphthylene	147	ug/L	5.0	74	40	140			
Acenaphthene	166	ug/L	5.0	83	40	140			
Fluorene	164	ug/L	5.0	82	40	140			
Phenanthrene	162	ug/L	5.0	81	40	140			
Anthracene	198	ug/L	5.0	99	40	140			
Fluoranthene	204	ug/L	5.0	102	40	140			
Pyrene	217	ug/L	5.0	109	40	140			
Benzo(a)Anthracene	196	ug/L	5.0	98	40	140			
Chrysene	236	ug/L	5.0	118	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	432	ug/L	5.0	108	40	140			
Benzo(a)Pyrene	220	ug/L	5.0	110	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	398	ug/L	5.0	100	40	140			
Benzo(g,h,I)perylene	195	ug/L	5.0	97	40	140			
Surr: 2-Bromonaphthalene			5.0	65	40	140			
Surr: 2-Fluorobiphenyl			5.0	77	40	140			
Surr: o-Terphenyl			5.0	104	40	140			
Lab ID: MB-99961-99870	Method Blank				Run: GCFID-HP4-B_160609D			06/10/16 19:13	
C11 to C22 Aromatics	ND	ug/L	300						
Total Extractable Hydrocarbons	ND	ug/L	300						
Naphthalene	ND	ug/L	5.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 99961
Lab ID: MB-99961-99870	Method Blank				Run: GCFID-HP4-B_160609D				06/10/16 19:13
2-MethylNaphthalene	ND	ug/L	5.0						
Acenaphthylene	ND	ug/L	5.0						
Acenaphthene	ND	ug/L	5.0						
Fluorene	ND	ug/L	5.0						
Phenanthrene	ND	ug/L	5.0						
Anthracene	ND	ug/L	5.0						
Fluoranthene	ND	ug/L	5.0						
Pyrene	ND	ug/L	5.0						
Benzo(a)Anthracene	ND	ug/L	5.0						
Chrysene	ND	ug/L	5.0						
Benzo(b)Fluoranthene/Benzo(k)Fluoran	ND	ug/L	5.0						
Benzo(a)Pyrene	ND	ug/L	5.0						
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	ND	ug/L	5.0						
Benzo(g,h,I)perylene	ND	ug/L	5.0						
Surr: 2-Bromonaphthalene			5.0	68	40	140			
Surr: 2-Fluorobiphenyl			5.0	65	40	140			
Surr: o-Terphenyl			5.0	85	40	140			
Lab ID: B16060300-001BMS	Sample Matrix Spike				Run: GCFID-HP4-B_160609D				06/10/16 22:03
C11 to C22 Aromatics	5900	ug/L	570	92	40	140			
Total Extractable Hydrocarbons	10800	ug/L	570	82	40	140			
Naphthalene	186	ug/L	9.4	49	40	140			
2-MethylNaphthalene	207	ug/L	9.4	55	40	140			
Acenaphthylene	269	ug/L	9.4	71	40	140			
Acenaphthene	335	ug/L	9.4	89	40	140			
Fluorene	299	ug/L	9.4	79	40	140			
Phenanthrene	289	ug/L	9.4	77	40	140			
Anthracene	354	ug/L	9.4	94	40	140			
Fluoranthene	361	ug/L	9.4	96	40	140			
Pyrene	386	ug/L	9.4	102	40	140			
Benzo(a)Anthracene	345	ug/L	9.4	91	40	140			
Chrysene	419	ug/L	9.4	111	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	765	ug/L	9.4	101	40	140			
Benzo(a)Pyrene	388	ug/L	9.4	103	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	695	ug/L	9.4	92	40	140			
Benzo(g,h,I)perylene	340	ug/L	9.4	90	40	140			
Surr: 2-Bromonaphthalene			9.4	64	40	140			
Surr: 2-Fluorobiphenyl			9.4	74	40	140			
Surr: o-Terphenyl			9.4	101	40	140			
Lab ID: B16060300-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_160609D				06/10/16 23:28
C11 to C22 Aromatics	6380	ug/L	570	99	40	140	7.9	20	
Total Extractable Hydrocarbons	11500	ug/L	570	89	40	140	6.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 99961
Lab ID: B16060300-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_160609D			06/10/16 23:28	
Naphthalene	202	ug/L	9.4	54	40	140	8.1	20	
2-MethylNaphthalene	224	ug/L	9.4	59	40	140	7.9	20	
Acenaphthylene	292	ug/L	9.4	77	40	140	8.1	20	
Acenaphthene	355	ug/L	9.4	94	40	140	5.6	20	
Fluorene	328	ug/L	9.4	87	40	140	9.2	20	
Phenanthrene	321	ug/L	9.4	85	40	140	11	20	
Anthracene	389	ug/L	9.4	103	40	140	9.6	20	
Fluoranthene	391	ug/L	9.4	104	40	140	8.1	20	
Pyrene	415	ug/L	9.4	110	40	140	7.2	20	
Benzo(a)Anthracene	376	ug/L	9.4	100	40	140	8.6	20	
Chrysene	467	ug/L	9.4	124	40	140	11	20	
Benzo(b)Fluoranthene/Benzo(k)Fluoran	821	ug/L	9.4	109	40	140	7.1	20	
Benzo(a)Pyrene	415	ug/L	9.4	110	40	140	6.8	20	
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	748	ug/L	9.4	99	40	140	7.4	20	
Benzo(g,h,I)perylene	362	ug/L	9.4	96	40	140	6.2	20	
Surr: 2-Bromonaphthalene			9.4	66	40	140			
Surr: 2-Fluorobiphenyl			9.4	76	40	140			
Surr: o-Terphenyl			9.4	108	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Analytical Run: R262302
Lab ID: CCV_0609HP445r-W	Continuing Calibration Verification Standard								06/10/16 14:42
n-Nonane	186	ug/L	5.0	93	75	125			
n-Decane	198	ug/L	5.0	99	75	125			
n-Dodecane	188	ug/L	5.0	94	75	125			
n-Tetradecane	195	ug/L	5.0	98	75	125			
n-Hexadecane	191	ug/L	5.0	95	75	125			
n-Octadecane	190	ug/L	5.0	95	75	125			
n-Nonadecane	189	ug/L	5.0	95	75	125			
n-Eicosane	188	ug/L	5.0	94	75	125			
n-Docosane	188	ug/L	5.0	94	75	125			
n-Tetracosane	188	ug/L	5.0	94	75	125			
n-Hexacosane	188	ug/L	5.0	94	75	125			
n-Octacosane	176	ug/L	5.0	88	75	125			
n-Triacontane	189	ug/L	5.0	95	75	125			
n-Hexatriacontane	186	ug/L	5.0	93	75	125			
Surr: 1-Chloro-octadecane			5.0	97	75	125			
Lab ID: CCV_0609HP446r-W	Continuing Calibration Verification Standard								06/10/16 15:28
Naphthalene	194	ug/L	5.0	97	75	125			
2-MethylNaphthalene	188	ug/L	5.0	94	75	125			
Acenaphthylene	198	ug/L	5.0	99	75	125			
Acenaphthene	197	ug/L	5.0	99	75	125			
Fluorene	195	ug/L	5.0	98	75	125			
Phenanthrene	190	ug/L	5.0	95	75	125			
Anthracene	200	ug/L	5.0	100	75	125			
Fluoranthene	195	ug/L	5.0	98	75	125			
Pyrene	195	ug/L	5.0	97	75	125			
Benzo(a)Anthracene	193	ug/L	5.0	96	75	125			
Chrysene	205	ug/L	5.0	102	75	125			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	394	ug/L	5.0	98	75	125			
Benzo(a)Pyrene	198	ug/L	5.0	99	75	125			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	388	ug/L	5.0	97	75	125			
Benzo(g,h,I)perylene	194	ug/L	5.0	97	75	125			
Surr: 2-Bromonaphthalene			5.0	93	75	125			
Surr: 2-Fluorobiphenyl			5.0	97	75	125			
Surr: o-Terphenyl			5.0	100	75	125			

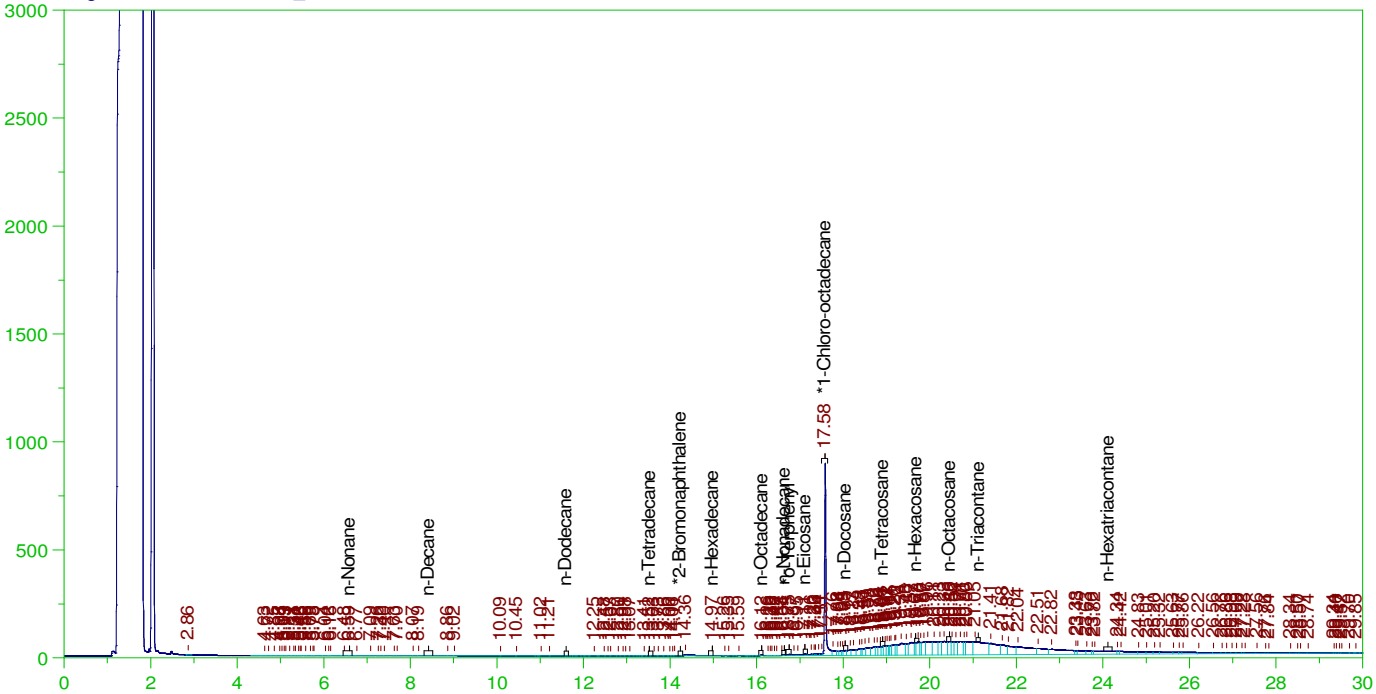
Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MW-11 Batch ID: 99961

G:\org\HP4\DAT\HP4060916_b\0609HP4.0052.RAW B16060300-001B ;0609HP4 , $HC-ALI-GRP-W, V52



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B16060300-001B ;0609HP4 , $HC-ALI-GRP-W, V52
Raw File: G:\org\HP4\DAT\HP4060916_b\0609HP4.0052.RAW
Date & Time Acquired: 6/10/2016 7:55:58 PM
Method File: g:\org\HP4\Methods\L3_EPH-CP-L%.met
Calibration File: G:\Org\HP4\Cals\AL150824CP.CAL
Sample Weight: 1.03 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 27089.8
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 27955.26
Mean RF for Total Extractable Hydrocarbons: 27584.35
Rt range for Diesel Range Organics: 8.32 to 20.49
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.45 to 16.58
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.605 to 24.22

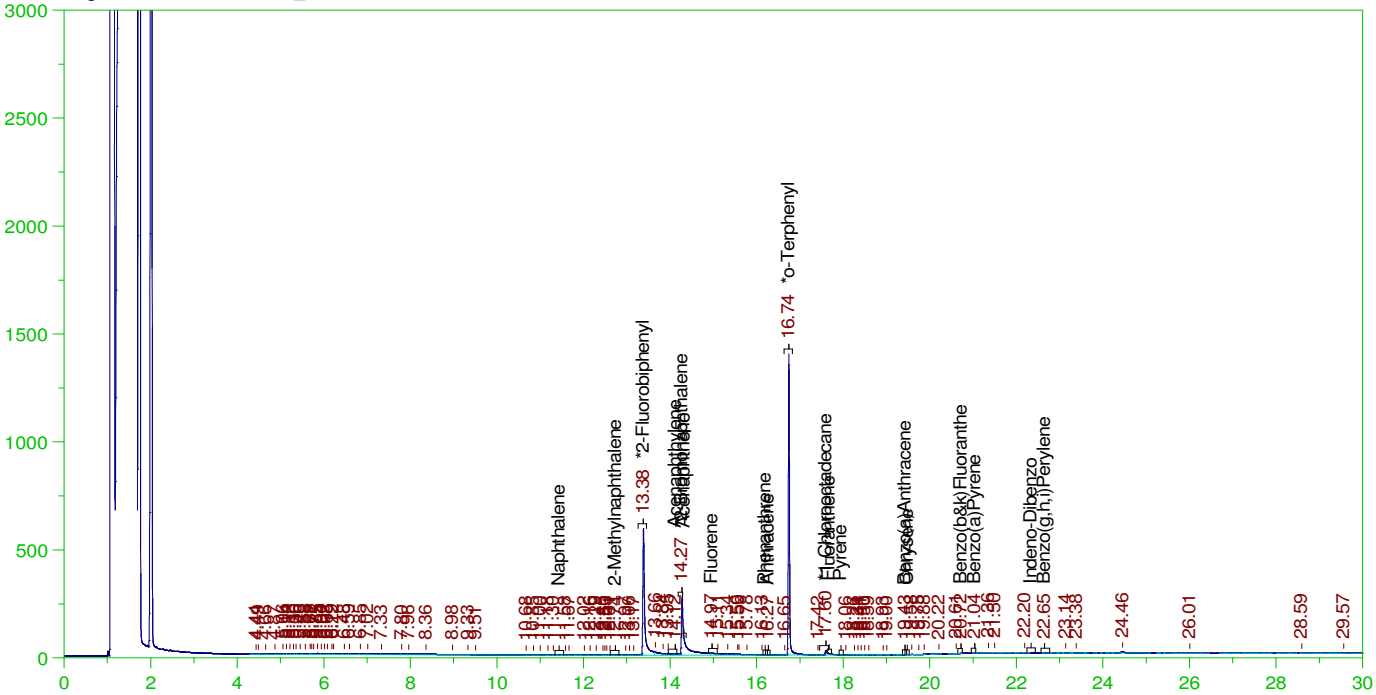
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane_____	17.58	194.175	159.585	82.19	-

DRO Area:7487486 DRO Amount: 527.0671
TEH Area:1.664716E+07 TEH Amount: 1171.844

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:269534.2 C9-C18 Amount: 19.31972
C19-C36 Area:1.482592E+07C19-C36 Amount: 1029.795

MW-11 Batch ID: 99961

G:\org\HP4\DAT\HP4060916_b\0609HP4.0053.RAW B16060300-001B ;0609HP4 , $HC-ARO-GRP-W, V53



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B16060300-001B ;0609HP4 , $HC-ARO-GRP-W, V53
Raw File: G:\org\HP4\DAT\HP4060916_b\0609HP4.0053.RAW
Date & Time Acquired: 6/10/2016 8:38:34 PM
Method File: g:\org\HP4\Methods\RR_EPH-CP-L%.met
Calibration File: G:\Org\HP4\Cals\AR150824CP.CAL
Sample Weight: 1.03 Dilution: 2 S.A.: 1

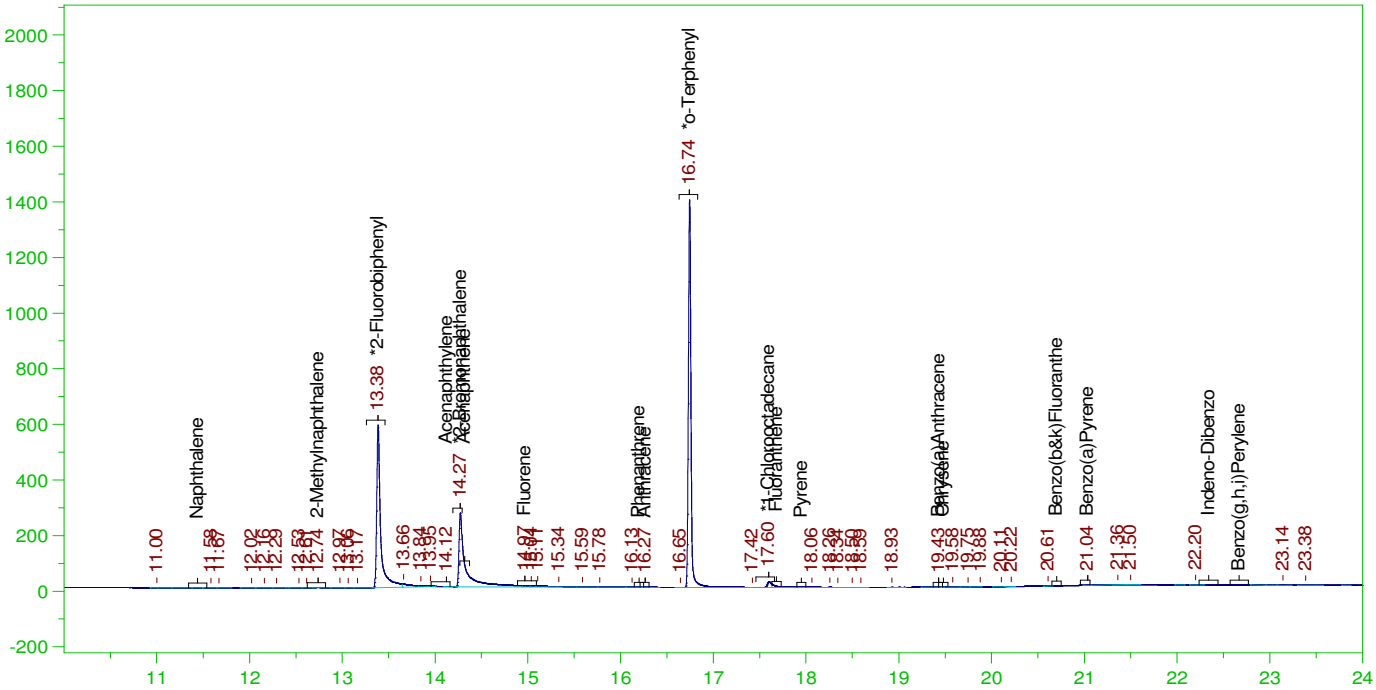
Mean RF EPH Aromatics: 28981.74
Rt range for EPH C11 to C22 Aromatics: 11.34 to 22.77

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.384	194.175	131.076	67.5	-
*2-Bromonaphthalene	14.273	194.175	152.216	78.39	-
*o-Terphenyl	16.744	194.175	179.724	92.56	-
*1-Chlorooctadecane	17.597	194.175	10.078	5.19	-

C11-C22 Aromatics Area:684341.5 C11-C22 Aromatics Amount: 45.85019
EPH Aromatics total Area:1836338 EPH Aromatics Total Amount: 123.0328

MW-11 Batch ID: 99961

G:\org\HP4\DAT\HP4060916_b\0609HP4.0053.RAW B16060300-001B ;0609HP4 , $HC-ARO-GRP-W, V53



EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

Sample Name: B16060300-001B ;0609HP4 , $HC-ARO-GRP-W, V53
Raw File: G:\org\HP4\DAT\HP4060916_b\0609HP4.0053.RAW
Date & Time Acquired: 6/10/2016 8:38:34 PM
Method File: g:\org\HP4\Methods\RT_EPH-CP-L%.met
Calibration File: G:\Org\HP4\Cals\AR150824CP.CAL
Sample Weight: 1.03 Dilution: 2 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	.	.	.		1.942	U
2-Methylnaphthalene	12.736	12.736	12.736	8155	1.942	U
Acenaphthylene	14.123	14.123	14.123	1466	1.942	U
Acenaphthene	.	.	.		1.942	U
Fluorene	14.968	14.968	14.968	22092	1.942	U
Phenanthrene	.	.	.		1.942	U
Anthracene	16.267	16.267	16.267	1206	1.942	U
Fluoranthene	.	.	.		1.942	U
Pyrene	.	.	.		1.942	U
Benzo(a)Anthracene	19.43	19.43	19.43	786	1.942	U
Chrysene	.	.	.		1.942	U
Benzo(b&k)Fluoranthe	.	.	.		3.883	U
Benzo(a)Pyrene	21.037	21.037	21.037	992	1.942	U
Indeno-Dibenzo	.	.	.		3.883	U
Benzo(g,h,i)Perylene	.	.	.		1.942	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.384	194.175	128.995	66.43	40-140
*2-Bromonaphthalene	14.273	194.175	133.116	68.55	40-140
*o-Terphenyl	16.744	194.175	178.55	91.95	40-140
*1-Chlorooctadecane	17.597	194.175	9.564	4.93	40-140

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson GWM

Report Date: 06/15/16
Work Order: B16060300

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8082A									Batch: 99803
Lab ID: MB-99803	Method Blank				Run: AECD.I_160606B				06/06/16 16:20
Aroclor 1016	ND	ug/L	0.50						
Aroclor 1221	ND	ug/L	0.50						
Aroclor 1232	ND	ug/L	0.50						
Aroclor 1242	ND	ug/L	0.50						
Aroclor 1248	ND	ug/L	0.50						
Aroclor 1254	ND	ug/L	0.50						
Aroclor 1260	ND	ug/L	0.50						
Aroclor 1262	ND	ug/L	0.50						
Aroclor 1268	ND	ug/L	0.50						
Surr: Decachlorobiphenyl			0.050	98	44	130			
Surr: Tetrachloro-m-xylene			0.050	73	40	110			
Lab ID: AR1254-99803	Laboratory Control Sample				Run: AECD.I_160606B				06/06/16 16:48
Aroclor 1254	8.69	ug/L	0.50	87	55	132			
Surr: Decachlorobiphenyl			0.050	101	44	130			
Surr: Tetrachloro-m-xylene			0.050	76	40	110			
Lab ID: B16060300-006AMB	Sample Matrix Spike				Run: AECD.I_160606B				06/06/16 20:33
Aroclor 1254	8.44	ug/L	0.50	84	55	132			
Surr: Decachlorobiphenyl			0.050	101	44	130			
Surr: Tetrachloro-m-xylene			0.050	71	40	110			
Lab ID: B16060300-006ADB	Sample Matrix Spike Duplicate				Run: AECD.I_160606B				06/06/16 21:01
Aroclor 1254	8.45	ug/L	0.50	85	55	132	0.1	40	
Surr: Decachlorobiphenyl			0.050	99	44	130			
Surr: Tetrachloro-m-xylene			0.050	72	40	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

NewFields

B16060300

Login completed by: Cindy Rohrer

Reviewed by: BL2000\tedwards

Reviewed Date: 6/7/2016

Date Received: 6/3/2016

Received by: mme

Carrier name: Return-UPS Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	Not Applicable ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 2.7°C, Cooler 2 was 1.0°C and Cooler 3 was 1.7°C.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: Newfields

Project Name, PWS, Permit, Etc.: Stimson GWM

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☐

Report Mail Address (Required): 1120 Cedar Street, Missoula, MT 59802

Contact Name: Tyler Etzel

Phone/Fax: (406) 549-8270

Cell: (406) 240-7795

Sampler: (Please Print) Ty Schmechel

☐ No Hard Copy Email: tetzel@newfields.com

Invoice Contact & Phone: Donna McCammon (406) 549-8270

Purchase Order:

Quote/Bottle Order: 102330

Invoice Address (Required): 11 11

☐ No Hard Copy Email: dmccammon@newfields.com

Special Report/Formats:

☐ DW ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

ANALYSIS REQUESTED

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: *3 coolers*

Shipped by: UPS ground AN

Cooler ID(s):

Receipt Temp: 2.7, 1.0, 1.7 °C

On Ice: Y N

Custody Seal: On Bottle Y N; On Cooler Y N; Intact Y N; Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water)	EPH SW 8015	PCBs SW 8082	SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1 MW-11	6/2/16	1410	W	↓	↓		X	
2 MW-13R	6/2/16	1055	↓				↓	
3 MW-19	6/2/16	0908						
4 MW-20	6/2/16	0810						
5 MW-21	6/1/16	1505						
6 MW-23	6/1/16	1400						
7								
8								
9								
10								

LABORATORY USE ONLY: L1606060300-001; 2; 3; 4; 5; 6

Custody Record MUST be Signed

Relinquished by (print): Ty Schmechel Date/Time: 6/2/16 1700 Signature: Ty S

Relinquished by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by Laboratory: Date/Time: 6/3/16 09:25 Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ANALYTICAL SUMMARY REPORT

December 22, 2016

NewFields
1120 Cedar St
Missoula, MT 59802-3911

Work Order: B16121005

Project Name: Stimson Groundwater

Energy Laboratories Inc Billings MT received the following 6 samples for NewFields on 12/14/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B16121005-001	MW-11	12/13/16 12:45	12/14/16	Aqueous	EPH-Liquid-Liquid Extraction EPH Fractionation Hydrocarbons, Aliphatic Extractable Petroleum Hydrocarbons, Aromatic Extractable Petroleum Hydrocarbons, Extractable Petroleum Screen Polychlorinated Biphenyls (PCB's) Separatory Funnel Liquid Liquid Ext.
B16121005-002	MW-13R	12/13/16 11:27	12/14/16	Aqueous	EPH-Liquid-Liquid Extraction Hydrocarbons, Extractable Petroleum Screen Polychlorinated Biphenyls (PCB's) Separatory Funnel Liquid Liquid Ext.
B16121005-003	MW-19	12/12/16 13:35	12/14/16	Aqueous	Same As Above
B16121005-004	MW-20	12/12/16 11:40	12/14/16	Aqueous	Same As Above
B16121005-005	MW-21	12/12/16 17:20	12/14/16	Aqueous	Same As Above
B16121005-006	MW-23	12/13/16 10:22	12/14/16	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: NewFields
Project: Stimson Groundwater
Work Order: B16121005

Report Date: 12/22/16

CASE NARRATIVE

Fractionation without PAHs was added to the following sample(s) per email from Tyler Etzel on 12/19/16:

B16121005-001 MW-11

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater
Lab ID: B16121005-001
Client Sample ID: MW-11

Report Date: 12/22/16
Collection Date: 12/13/16 12:45
DateReceived: 12/14/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	1440	ug/L	*	312	1000	SW8015M	12/17/16 00:15 / tmc
Surr: o-Terphenyl	94.0	%REC		40-140		SW8015M	12/17/16 00:15 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	ND	ug/L		312	1400	MA-EPH	12/22/16 07:41 / mdw
C19 to C36 Aliphatics	1040	ug/L	*	312	1000	MA-EPH	12/22/16 07:41 / mdw
Surr: 1-Chloro-octadecane	75.0	%REC		40-140		MA-EPH	12/22/16 07:41 / mdw
C11 to C22 Aromatics	ND	ug/L		312	1100	MA-EPH	12/22/16 09:05 / mdw
Total Extractable Hydrocarbons	1150	ug/L	*	312	1000	MA-EPH	12/22/16 09:05 / mdw
Surr: 2-Bromonaphthalene	92.0	%REC		40-140		MA-EPH	12/22/16 09:05 / mdw
Surr: 2-Fluorobiphenyl	88.0	%REC		40-140		MA-EPH	12/22/16 09:05 / mdw
Surr: o-Terphenyl	81.0	%REC		40-140		MA-EPH	12/22/16 09:05 / mdw
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	12/16/16 03:50 / jem
Surr: Decachlorobiphenyl	49.0	%REC		44-130		SW8082A	12/16/16 03:50 / jem
Surr: Tetrachloro-m-xylene	75.0	%REC		40-110		SW8082A	12/16/16 03:50 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater
Lab ID: B16121005-002
Client Sample ID: MW-13R

Report Date: 12/22/16
Collection Date: 12/13/16 11:27
DateReceived: 12/14/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		303	1000	SW8015M	12/17/16 03:06 / tmc
Surr: o-Terphenyl	90.0	%REC		40-140		SW8015M	12/17/16 03:06 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1248	ND	ug/L	D	2.5		SW8082A	12/16/16 04:18 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	12/16/16 04:18 / jem
Surr: Decachlorobiphenyl	69.0	%REC		44-130		SW8082A	12/16/16 04:18 / jem
Surr: Tetrachloro-m-xylene	77.0	%REC		40-110		SW8082A	12/16/16 04:18 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater
Lab ID: B16121005-003
Client Sample ID: MW-19

Report Date: 12/22/16
Collection Date: 12/12/16 13:35
DateReceived: 12/14/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		303	1000	SW8015M	12/17/16 03:49 / tmc
Surr: o-Terphenyl	92.0	%REC		40-140		SW8015M	12/17/16 03:49 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	12/16/16 06:10 / jem
Surr: Decachlorobiphenyl	104	%REC		44-130		SW8082A	12/16/16 06:10 / jem
Surr: Tetrachloro-m-xylene	77.0	%REC		40-110		SW8082A	12/16/16 06:10 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater
Lab ID: B16121005-004
Client Sample ID: MW-20

Report Date: 12/22/16
Collection Date: 12/12/16 11:40
DateReceived: 12/14/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		303	1000	SW8015M	12/17/16 04:32 / tmc
Surr: o-Terphenyl	73.0	%REC		40-140		SW8015M	12/17/16 04:32 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	12/16/16 04:46 / jem
Surr: Decachlorobiphenyl	101	%REC		44-130		SW8082A	12/16/16 04:46 / jem
Surr: Tetrachloro-m-xylene	79.0	%REC		40-110		SW8082A	12/16/16 04:46 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater
Lab ID: B16121005-005
Client Sample ID: MW-21

Report Date: 12/22/16
Collection Date: 12/12/16 17:20
DateReceived: 12/14/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		309	1000	SW8015M	12/17/16 05:57 / tmc
Surr: o-Terphenyl	80.0	%REC		40-140		SW8015M	12/17/16 05:57 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	12/16/16 05:14 / jem
Surr: Decachlorobiphenyl	104	%REC		44-130		SW8082A	12/16/16 05:14 / jem
Surr: Tetrachloro-m-xylene	85.0	%REC		40-110		SW8082A	12/16/16 05:14 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater
Lab ID: B16121005-006
Client Sample ID: MW-23

Report Date: 12/22/16
Collection Date: 12/13/16 10:22
DateReceived: 12/14/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	ug/L		309	1000	SW8015M	12/17/16 06:40 / tmc
Surr: o-Terphenyl	83.0	%REC		40-140		SW8015M	12/17/16 06:40 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1221	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1232	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1242	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1248	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1254	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1260	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1262	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Aroclor 1268	ND	ug/L		0.50		SW8082A	12/16/16 05:42 / jem
Surr: Decachlorobiphenyl	100	%REC		44-130		SW8082A	12/16/16 05:42 / jem
Surr: Tetrachloro-m-xylene	83.0	%REC		40-110		SW8082A	12/16/16 05:42 / jem

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M									Batch: 105219
Lab ID: MB-105219	Method Blank				Run: GCFID-HP3-B_161216A				12/16/16 22:49
Total Extractable Hydrocarbons	ND	ug/L	300						
Surr: o-Terphenyl				87	40	140			
Lab ID: LCS-105219	Laboratory Control Sample				Run: GCFID-HP3-B_161216A				12/16/16 23:32
Total Extractable Hydrocarbons	6280	ug/L	300	101	60	140			
Surr: o-Terphenyl				104	40	140			
Lab ID: B16121005-001BMS	Sample Matrix Spike				Run: GCFID-HP3-B_161216A				12/17/16 00:58
Total Extractable Hydrocarbons	14100	ug/L	630	97	60	140			
Surr: o-Terphenyl				95	40	140			
Lab ID: B16121005-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP3-B_161216A				12/17/16 01:40
Total Extractable Hydrocarbons	13700	ug/L	630	94	60	140	2.6	20	
Surr: o-Terphenyl				100	40	140			
Method: SW8015M									Analytical Run: R271910
Lab ID: CCV_1216HP316r-W	Continuing Calibration Verification Standard								12/16/16 22:06
n-Nonane	204	ug/L		102	75	125			
n-Decane	207	ug/L		103	75	125			
n-Dodecane	207	ug/L		104	75	125			
n-Tetradecane	218	ug/L		109	75	125			
n-Hexadecane	209	ug/L		105	75	125			
n-Octadecane	207	ug/L		103	75	125			
n-Nonadecane	207	ug/L		103	75	125			
n-Eicosane	208	ug/L		104	75	125			
n-Docosane	206	ug/L		103	75	125			
n-Tetracosane	206	ug/L		103	75	125			
n-Hexacosane	207	ug/L		104	75	125			
n-Octacosane	195	ug/L		97	75	125			
n-Triacontane	208	ug/L		104	75	125			
n-Hexatriacontane	207	ug/L		104	75	125			
Surr: o-Terphenyl				113	75	125			

Qualifiers:

RL - Analyte reporting limit.

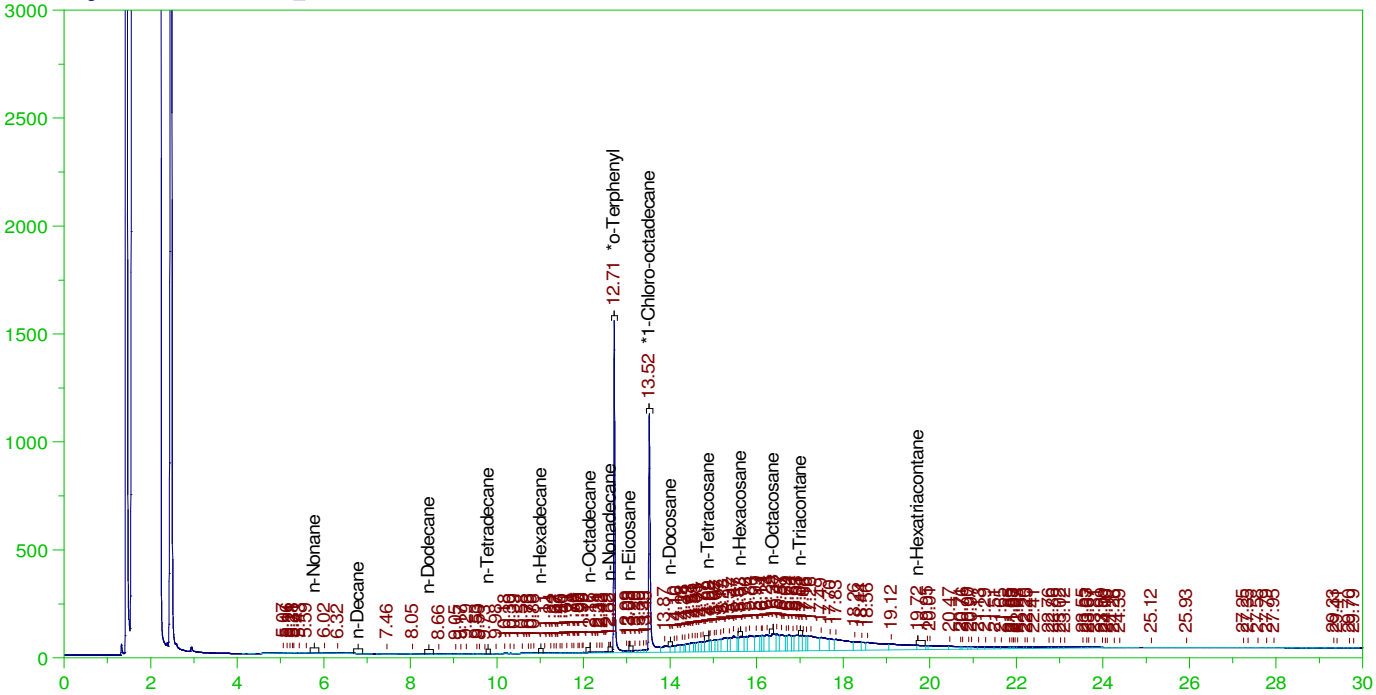
ND - Not detected at the reporting limit.

MW-11

Batch ID: 105219

G:\org\HP3\DAT\HP3121616_b\1216HP3.0019.RAW

B16121005-001B ;1216HP3 , $HC-EPH-SCRN-W, V19



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16121005-001B ;1216HP3 , $HC-EPH-SCRN-W, V19
Raw File: G:\org\HP3\DAT\HP3121616_b\1216HP3.0019.RAW
Date & Time Acquired: 12/17/2016 12:15:12 AM
Method File: g:\org\HP3\Methods\SR_SCN-121619-PW-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PW.CAL
Sample Weight: 0.96 Dilution: 2 S.A.: 1

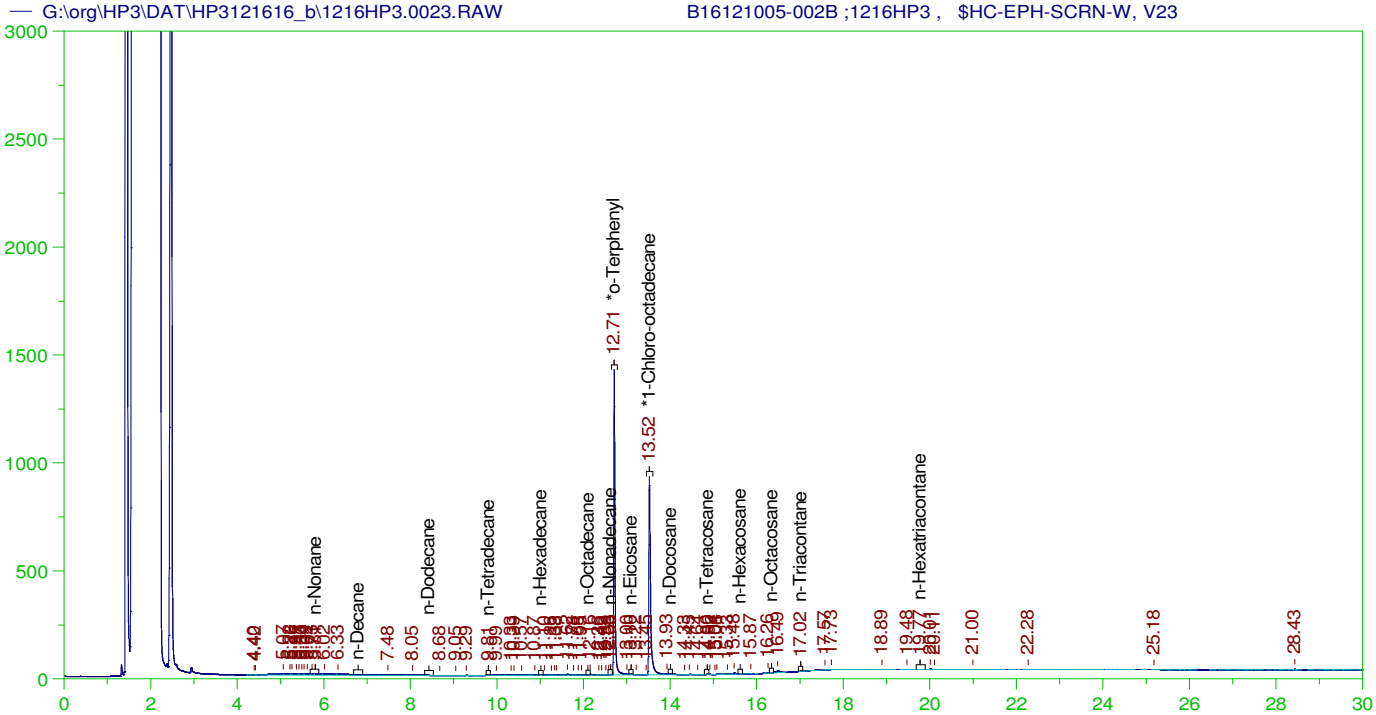
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 6.694 to 17.067
Rt range for C9 to C18 Hydrocarbons: 5.683 to 12.646
Rt range for C19 to C36 Hydrocarbons: 12.681 to 19.891

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.709	3063714	208.333	195.073	93.64	-
*1-Chloro-octadecane	13.521	2650131	208.333	212.395	101.95	-

DRO Area:1.170559E+07 DRO Amount: 826.485
TEH Area:2.039646E+07 TEH Amount: 1440.112
C9-C18 Area:304136.4 C9-C18 Amount: 21.54583
C19-C36 Area:1.800682E+07C19-C36 Amount: 1267.157

MW-13R Batch ID: 105219

G:\org\HP3\DAT\HP3121616_b\1216HP3.0023.RAW B16121005-002B ;1216HP3 , $HC-EPH-SCRN-W, V23



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16121005-002B ;1216HP3 , $HC-EPH-SCRN-W, V23
Raw File: G:\org\HP3\DAT\HP3121616_b\1216HP3.0023.RAW
Date & Time Acquired: 12/17/2016 3:06:32 AM
Method File: g:\org\HP3\Methods\SR_SCN-PW-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PW.CAL
Sample Weight: 0.99 Dilution: 2 S.A.: 1

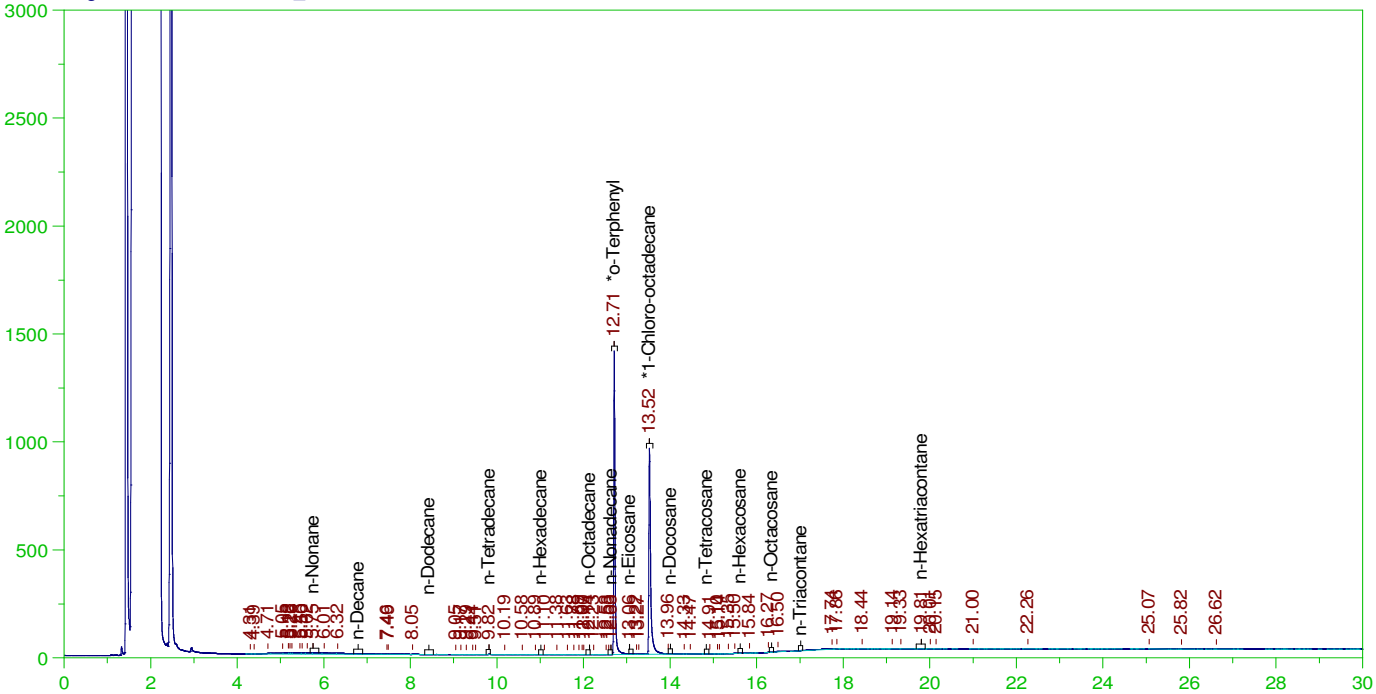
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 6.694 to 17.067
Rt range for C9 to C18 Hydrocarbons: 5.683 to 12.646
Rt range for C19 to C36 Hydrocarbons: 12.681 to 19.891

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.71	2955105	202.02	182.456	90.32	-
*1-Chloro-octadecane	13.524	2382160	202.02	185.133	91.64	-

DRO Area:443811.3 DRO Amount: 30.38617
TEH Area:1072415 TEH Amount: 73.42444
C9-C18 Area:523910.5 C9-C18 Amount: 35.9905
C19-C36 Area:253555.8 C19-C36 Amount: 17.30226

MW-19 Batch ID: 105219

G:\org\HP3\DAT\HP3121616_b\1216HP3.0024.RAW B16121005-003B ;1216HP3 , $HC-EPH-SCRN-W, V24



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16121005-003B ;1216HP3 , $HC-EPH-SCRN-W, V24
Raw File: G:\org\HP3\DAT\HP3121616_b\1216HP3.0024.RAW
Date & Time Acquired: 12/17/2016 3:49:19 AM
Method File: g:\org\HP3\Methods\SR_SCN-PW-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PW.CAL
Sample Weight: 0.99 Dilution: 2 S.A.: 1

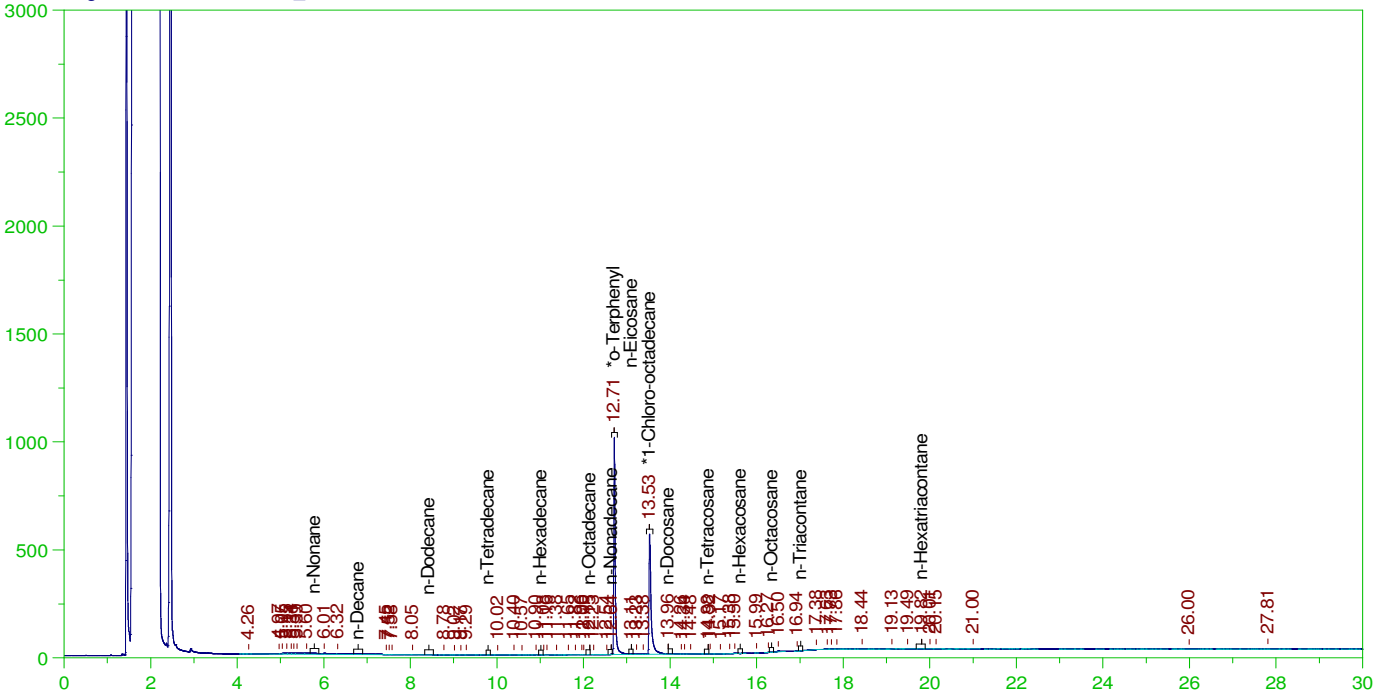
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 6.694 to 17.067
Rt range for C9 to C18 Hydrocarbons: 5.683 to 12.646
Rt range for C19 to C36 Hydrocarbons: 12.681 to 19.891

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.711	3025682	202.02	186.814	92.47	-
*1-Chloro-octadecane	13.525	2545835	202.02	197.853	97.94	-

DRO Area:238735.3 DRO Amount: 16.34535
TEH Area:899341.3 TEH Amount: 61.57468
C9-C18 Area:415148.2 C9-C18 Amount: 28.51898
C19-C36 Area:198274.3 C19-C36 Amount: 13.52993

MW-20 Batch ID: 105219

G:\org\HP3\DAT\HP3121616_b\1216HP3.0025.RAW B16121005-004B ;1216HP3 , $HC-EPH-SCRN-W, V25



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16121005-004B ;1216HP3 , $HC-EPH-SCRN-W, V25
Raw File: G:\org\HP3\DAT\HP3121616_b\1216HP3.0025.RAW
Date & Time Acquired: 12/17/2016 4:32:05 AM
Method File: g:\org\HP3\Methods\SR_SCN-PW-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PW.CAL
Sample Weight: 0.99 Dilution: 2 S.A.: 1

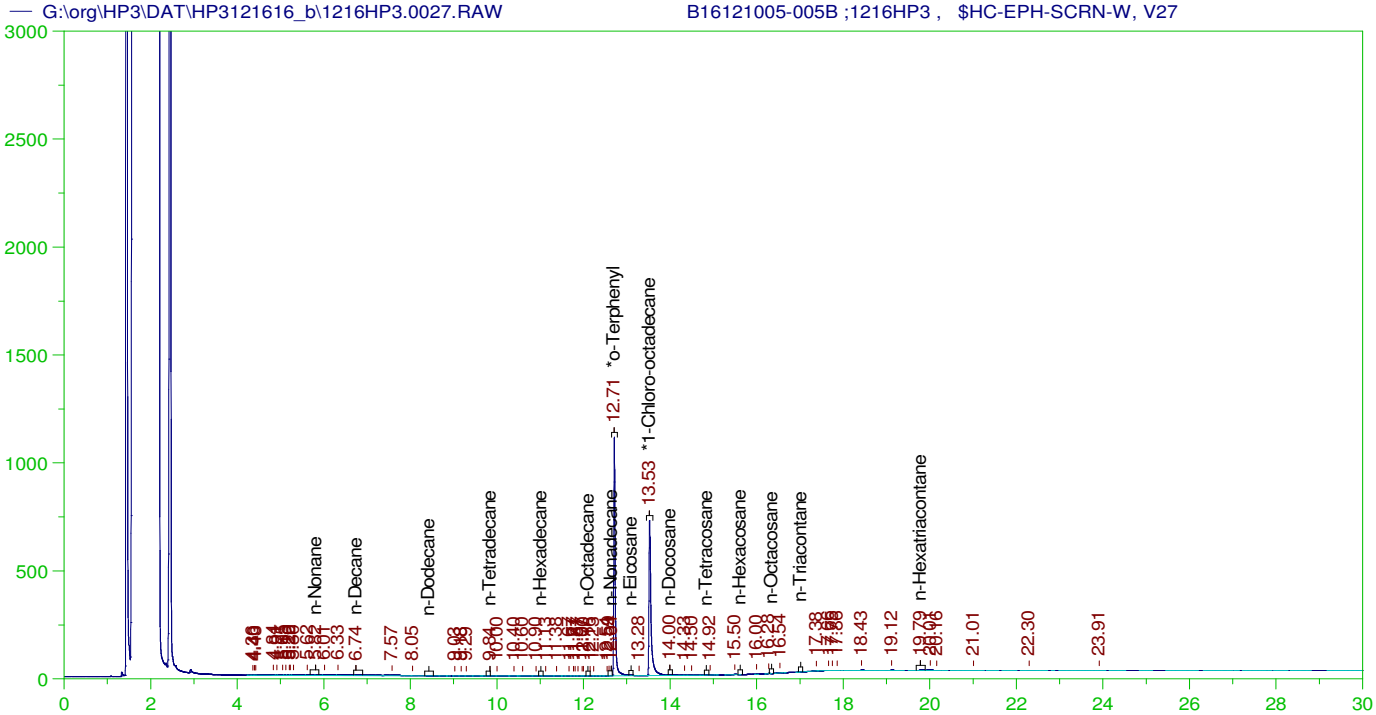
Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 6.694 to 17.067
Rt range for C9 to C18 Hydrocarbons: 5.683 to 12.646
Rt range for C19 to C36 Hydrocarbons: 12.681 to 19.891

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.712	2397050	202.02	148.	73.26	-
*1-Chloro-octadecane	13.529	1733105	202.02	134.691	66.67	-

DRO Area:207299.4 DRO Amount: 14.19305
TEH Area:715822.4 TEH Amount: 49.0098
C9-C18 Area:272635 C9-C18 Amount: 18.72891
C19-C36 Area:155176.9 C19-C36 Amount: 10.58904

MW-21 Batch ID: 105219

G:\org\HP3\DAT\HP3121616_b\1216HP3.0027.RAW B16121005-005B ;1216HP3 , $HC-EPH-SCRN-W, V27



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16121005-005B ;1216HP3 , $HC-EPH-SCRN-W, V27
Raw File: G:\org\HP3\DAT\HP3121616_b\1216HP3.0027.RAW
Date & Time Acquired: 12/17/2016 5:57:46 AM
Method File: g:\org\HP3\Methods\SR_SCN-PW-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PW.CAL
Sample Weight: 0.97 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 6.694 to 17.067
Rt range for C9 to C18 Hydrocarbons: 5.683 to 12.646
Rt range for C19 to C36 Hydrocarbons: 12.681 to 19.891

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.712	2606110	206.186	164.226	79.65	-
*1-Chloro-octadecane	13.529	2159185	206.186	171.264	83.06	-

DRO Area:248097.8 DRO Amount: 17.3366
TEH Area:685141.3 TEH Amount: 47.87637
C9-C18 Area:338465.7 C9-C18 Amount: 23.73061
C19-C36 Area:103700.3 C19-C36 Amount: 7.222252

MW-23 Batch ID: 105219

G:\org\HP3\DAT\HP3121616_b\1216HP3.0028.RAW B16121005-006B ;1216HP3 , $HC-EPH-SCRN-W, V28

EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B16121005-006B ;1216HP3 , $HC-EPH-SCRN-W, V28
Raw File: G:\org\HP3\DAT\HP3121616_b\1216HP3.0028.RAW
Date & Time Acquired: 12/17/2016 6:40:38 AM
Method File: g:\org\HP3\Methods\SR_SCN-PW-L%.met
Calibration File: G:\Org\HP3\Cals\SC160411PW.CAL
Sample Weight: 0.97 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29407.9
Mean RF for C19 to C36 Hydrocarbons: 29605.02
Mean RF for Total Extractable Hydrocarbons: 29506.46
Rt range for Diesel Range Organics: 6.694 to 17.067
Rt range for C9 to C18 Hydrocarbons: 5.683 to 12.646
Rt range for C19 to C36 Hydrocarbons: 12.681 to 19.891

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.711	2706661	206.186	170.562	82.72	-
*1-Chloro-octadecane	13.528	1856287	206.186	147.238	71.41	-

DRO Area:300614.6 DRO Amount: 21.00638
TEH Area:927236.1 TEH Amount: 64.7935
C9-C18 Area:442473.5 C9-C18 Amount: 31.02284
C19-C36 Area:203512.6 C19-C36 Amount: 14.17373

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 105295
Lab ID: LCS-105295-105219	Laboratory Control Sample				Run: GCFID-HP4-B_161221B				12/22/16 04:54
C9 to C18 Aliphatics	802	ug/L	300	67	40	140			
C19 to C36 Aliphatics	1370	ug/L	300	86	40	140			
n-Nonane	77.4	ug/L	5.0	39	30	140			
n-Decane	106	ug/L	5.0	53	40	140			
n-Dodecane	122	ug/L	5.0	61	40	140			
n-Tetradecane	142	ug/L	5.0	71	40	140			
n-Hexadecane	157	ug/L	5.0	78	40	140			
n-Octadecane	165	ug/L	5.0	83	40	140			
n-Nonadecane	170	ug/L	5.0	85	40	140			
n-Eicosane	170	ug/L	5.0	85	40	140			
n-Docosane	173	ug/L	5.0	86	40	140			
n-Tetracosane	176	ug/L	5.0	88	40	140			
n-Hexacosane	177	ug/L	5.0	88	40	140			
n-Octacosane	162	ug/L	5.0	81	40	140			
n-Triacontane	163	ug/L	5.0	82	40	140			
n-Hexatriacontane	171	ug/L	5.0	86	40	140			
Surr: 1-Chloro-octadecane			5.0	72	40	140			
Lab ID: MB-105295-105219	Method Blank				Run: GCFID-HP4-B_161221B				12/22/16 06:17
C9 to C18 Aliphatics	ND	ug/L	300						
C19 to C36 Aliphatics	ND	ug/L	300						
Surr: 1-Chloro-octadecane			5.0	65	40	140			
Lab ID: B16121005-001BMS	Sample Matrix Spike				Run: GCFID-HP4-B_161221B				12/22/16 09:46
C9 to C18 Aliphatics	1880	ug/L	630	74	40	140			
C19 to C36 Aliphatics	3510	ug/L	630	73	40	140			
n-Nonane	188	ug/L	5.0	45	30	140			
n-Decane	251	ug/L	5.0	60	40	140			
n-Dodecane	286	ug/L	5.0	68	40	140			
n-Tetradecane	337	ug/L	5.0	80	40	140			
n-Hexadecane	368	ug/L	5.0	87	40	140			
n-Octadecane	383	ug/L	5.0	91	40	140			
n-Nonadecane	391	ug/L	5.0	93	40	140			
n-Eicosane	389	ug/L	5.0	92	40	140			
n-Docosane	391	ug/L	5.0	93	40	140			
n-Tetracosane	396	ug/L	5.0	94	40	140			
n-Hexacosane	398	ug/L	5.0	95	40	140			
n-Octacosane	366	ug/L	5.0	87	40	140			
n-Triacontane	368	ug/L	5.0	88	40	140			
n-Hexatriacontane	388	ug/L	5.0	92	40	140			
Surr: 1-Chloro-octadecane			11	67	40	140			
Lab ID: B16121005-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_161221B				12/22/16 11:10
C9 to C18 Aliphatics	1840	ug/L	630	73	40	140	2.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 105295
Lab ID: B16121005-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_161221B			12/22/16 11:10	
C19 to C36 Aliphatics	3520	ug/L	630	74	40	140	0.2	20	
n-Nonane	162	ug/L	5.0	38	30	140	15	30	
n-Decane	226	ug/L	5.0	54	40	140	11	20	
n-Dodecane	263	ug/L	5.0	63	40	140	8.4	20	
n-Tetradecane	311	ug/L	5.0	74	40	140	7.9	20	
n-Hexadecane	349	ug/L	5.0	83	40	140	5.2	20	
n-Octadecane	377	ug/L	5.0	89	40	140	1.6	20	
n-Nonadecane	394	ug/L	5.0	94	40	140	0.8	20	
n-Eicosane	397	ug/L	5.0	94	40	140	2.1	20	
n-Docosane	402	ug/L	5.0	95	40	140	2.7	20	
n-Tetracosane	408	ug/L	5.0	97	40	140	2.8	20	
n-Hexacosane	410	ug/L	5.0	97	40	140	2.8	20	
n-Octacosane	376	ug/L	5.0	89	40	140	2.8	20	
n-Triacontane	379	ug/L	5.0	90	40	140	2.7	20	
n-Hexatriacontane	401	ug/L	5.0	95	40	140	3.3	20	
Surr: 1-Chloro-octadecane			11	83	40	140			
Lab ID: LCS-105295-105219	Laboratory Control Sample				Run: GCFID-HP4-B_161221B			12/22/16 05:36	
C11 to C22 Aromatics	2810	ug/L	300	83	40	140			
Total Extractable Hydrocarbons	5070	ug/L	300	82	40	140			
Naphthalene	106	ug/L	5.0	53	40	140			
2-MethylNaphthalene	118	ug/L	5.0	59	40	140			
Acenaphthylene	136	ug/L	5.0	68	40	140			
Acenaphthene	139	ug/L	5.0	70	40	140			
Fluorene	157	ug/L	5.0	79	40	140			
Phenanthrene	167	ug/L	5.0	84	40	140			
Anthracene	172	ug/L	5.0	86	40	140			
Fluoranthene	175	ug/L	5.0	87	40	140			
Pyrene	174	ug/L	5.0	87	40	140			
Benzo(a)Anthracene	182	ug/L	5.0	91	40	140			
Chrysene	184	ug/L	5.0	92	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	363	ug/L	5.0	91	40	140			
Benzo(a)Pyrene	179	ug/L	5.0	90	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	359	ug/L	5.0	90	40	140			
Benzo(g,h,I)perylene	172	ug/L	5.0	86	40	140			
Surr: 2-Bromonaphthalene			5.0	87	40	140			
Surr: 2-Fluorobiphenyl			5.0	78	40	140			
Surr: o-Terphenyl			5.0	84	40	140			
Lab ID: MB-105295-105219	Method Blank				Run: GCFID-HP4-B_161221B			12/22/16 06:59	
C11 to C22 Aromatics	ND	ug/L	300						
Total Extractable Hydrocarbons	ND	ug/L	300						
Naphthalene	ND	ug/L	5.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 105295
Lab ID: MB-105295-105219	Method Blank				Run: GCFID-HP4-B_161221B				12/22/16 06:59
2-MethylNaphthalene	ND	ug/L	5.0						
Acenaphthylene	ND	ug/L	5.0						
Acenaphthene	ND	ug/L	5.0						
Fluorene	ND	ug/L	5.0						
Phenanthrene	ND	ug/L	5.0						
Anthracene	ND	ug/L	5.0						
Fluoranthene	ND	ug/L	5.0						
Pyrene	ND	ug/L	5.0						
Benzo(a)Anthracene	ND	ug/L	5.0						
Chrysene	ND	ug/L	5.0						
Benzo(b)Fluoranthene/Benzo(k)Fluoran	ND	ug/L	5.0						
Benzo(a)Pyrene	ND	ug/L	5.0						
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	ND	ug/L	5.0						
Benzo(g,h,I)perylene	ND	ug/L	5.0						
Surr: 2-Bromonaphthalene			5.0	91	40	140			
Surr: 2-Fluorobiphenyl			5.0	82	40	140			
Surr: o-Terphenyl			5.0	76	40	140			
Lab ID: B16121005-001BMS	Sample Matrix Spike				Run: GCFID-HP4-B_161221B				12/22/16 10:28
C11 to C22 Aromatics	6720	ug/L	630	94	40	140			
Total Extractable Hydrocarbons	12600	ug/L	630	87	40	140			
Naphthalene	258	ug/L	11	61	40	140			
2-MethylNaphthalene	285	ug/L	11	68	40	140			
Acenaphthylene	328	ug/L	11	78	40	140			
Acenaphthene	331	ug/L	11	79	40	140			
Fluorene	375	ug/L	11	89	40	140			
Phenanthrene	397	ug/L	11	94	40	140			
Anthracene	405	ug/L	11	96	40	140			
Fluoranthene	411	ug/L	11	98	40	140			
Pyrene	412	ug/L	11	98	40	140			
Benzo(a)Anthracene	421	ug/L	11	100	40	140			
Chrysene	425	ug/L	11	101	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	837	ug/L	11	99	40	140			
Benzo(a)Pyrene	415	ug/L	11	99	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	827	ug/L	11	98	40	140			
Benzo(g,h,I)perylene	394	ug/L	11	94	40	140			
Surr: 2-Bromonaphthalene			11	94	40	140			
Surr: 2-Fluorobiphenyl			11	84	40	140			
Surr: o-Terphenyl			11	87	40	140			
Lab ID: B16121005-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_161221B				12/22/16 11:52
C11 to C22 Aromatics	6250	ug/L	630	87	40	140	7.2	20	
Total Extractable Hydrocarbons	12100	ug/L	630	84	40	140	4.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 105295
Lab ID: B16121005-001BMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP4-B_161221B			12/22/16 11:52	
Naphthalene	215	ug/L	11	51	40	140	18	20	
2-MethylNaphthalene	245	ug/L	11	58	40	140	15	20	
Acenaphthylene	287	ug/L	11	68	40	140	13	20	
Acenaphthene	295	ug/L	11	70	40	140	12	20	
Fluorene	337	ug/L	11	80	40	140	11	20	
Phenanthrene	362	ug/L	11	86	40	140	9.1	20	
Anthracene	376	ug/L	11	89	40	140	7.4	20	
Fluoranthene	389	ug/L	11	92	40	140	5.7	20	
Pyrene	390	ug/L	11	93	40	140	5.5	20	
Benzo(a)Anthracene	406	ug/L	11	96	40	140	3.7	20	
Chrysene	409	ug/L	11	97	40	140	3.7	20	
Benzo(b)Fluoranthene/Benzo(k)Fluoran	806	ug/L	11	96	40	140	3.8	20	
Benzo(a)Pyrene	399	ug/L	11	95	40	140	4.0	20	
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	790	ug/L	11	94	40	140	4.6	20	
Benzo(g,h,I)perylene	374	ug/L	11	89	40	140	5.2	20	
Surr: 2-Bromonaphthalene			11	91	40	140			
Surr: 2-Fluorobiphenyl			11	81	40	140			
Surr: o-Terphenyl			11	87	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Analytical Run: R272168
Lab ID: CCV_1221HP423r-W	Continuing Calibration Verification Standard								12/22/16 03:31
n-Nonane	201	ug/L	5.0	100	75	125			
n-Decane	206	ug/L	5.0	103	75	125			
n-Dodecane	195	ug/L	5.0	98	75	125			
n-Tetradecane	198	ug/L	5.0	99	75	125			
n-Hexadecane	196	ug/L	5.0	98	75	125			
n-Octadecane	196	ug/L	5.0	98	75	125			
n-Nonadecane	196	ug/L	5.0	98	75	125			
n-Eicosane	195	ug/L	5.0	97	75	125			
n-Docosane	195	ug/L	5.0	98	75	125			
n-Tetracosane	195	ug/L	5.0	97	75	125			
n-Hexacosane	194	ug/L	5.0	97	75	125			
n-Octacosane	183	ug/L	5.0	91	75	125			
n-Triacontane	196	ug/L	5.0	98	75	125			
n-Hexatriacontane	198	ug/L	5.0	99	75	125			
Surr: 1-Chloro-octadecane			5.0	105	75	125			
Lab ID: CCV_1221HP422r-W	Continuing Calibration Verification Standard								12/22/16 02:49
Naphthalene	206	ug/L	5.0	103	75	125			
2-MethylNaphthalene	199	ug/L	5.0	99	75	125			
Acenaphthylene	203	ug/L	5.0	102	75	125			
Acenaphthene	195	ug/L	5.0	98	75	125			
Fluorene	202	ug/L	5.0	101	75	125			
Phenanthrene	203	ug/L	5.0	102	75	125			
Anthracene	201	ug/L	5.0	101	75	125			
Fluoranthene	199	ug/L	5.0	99	75	125			
Pyrene	198	ug/L	5.0	99	75	125			
Benzo(a)Anthracene	204	ug/L	5.0	102	75	125			
Chrysene	201	ug/L	5.0	100	75	125			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	403	ug/L	5.0	101	75	125			
Benzo(a)Pyrene	202	ug/L	5.0	101	75	125			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	403	ug/L	5.0	101	75	125			
Benzo(g,h,I)perylene	201	ug/L	5.0	101	75	125			
Surr: 2-Bromonaphthalene			5.0	109	75	125			
Surr: 2-Fluorobiphenyl			5.0	108	75	125			
Surr: o-Terphenyl			5.0	105	75	125			

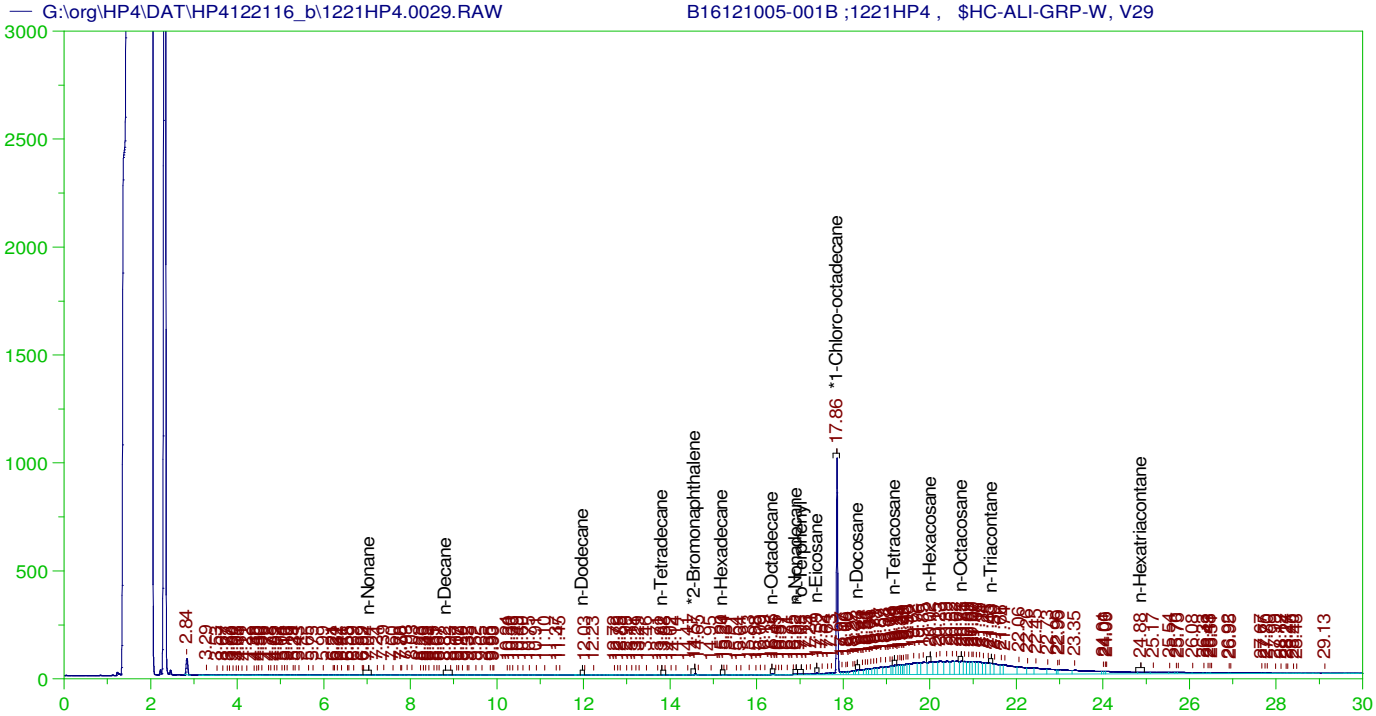
Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MW-11 Batch ID: 105295

G:\org\HP4\DAT\HP4122116_b\1221HP4.0029.RAW B16121005-001B ;1221HP4 , $HC-ALI-GRP-W, V29



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B16121005-001B ;1221HP4 , $HC-ALI-GRP-W, V29
Raw File: G:\org\HP4\DAT\HP4122116_b\1221HP4.0029.RAW
Date & Time Acquired: 12/22/2016 7:41:29 AM
Method File: g:\org\HP4\Methods\LR_EPH-122129-CWb-L%.met
Calibration File: G:\Org\HP4\Cals\AL150824CWb.CAL
Sample Weight: 0.96 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 27089.8
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 27955.26
Mean RF for Total Extractable Hydrocarbons: 27584.35
Rt range for Diesel Range Organics: 8.766 to 20.758
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.9 to 16.846
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.871 to 24.958

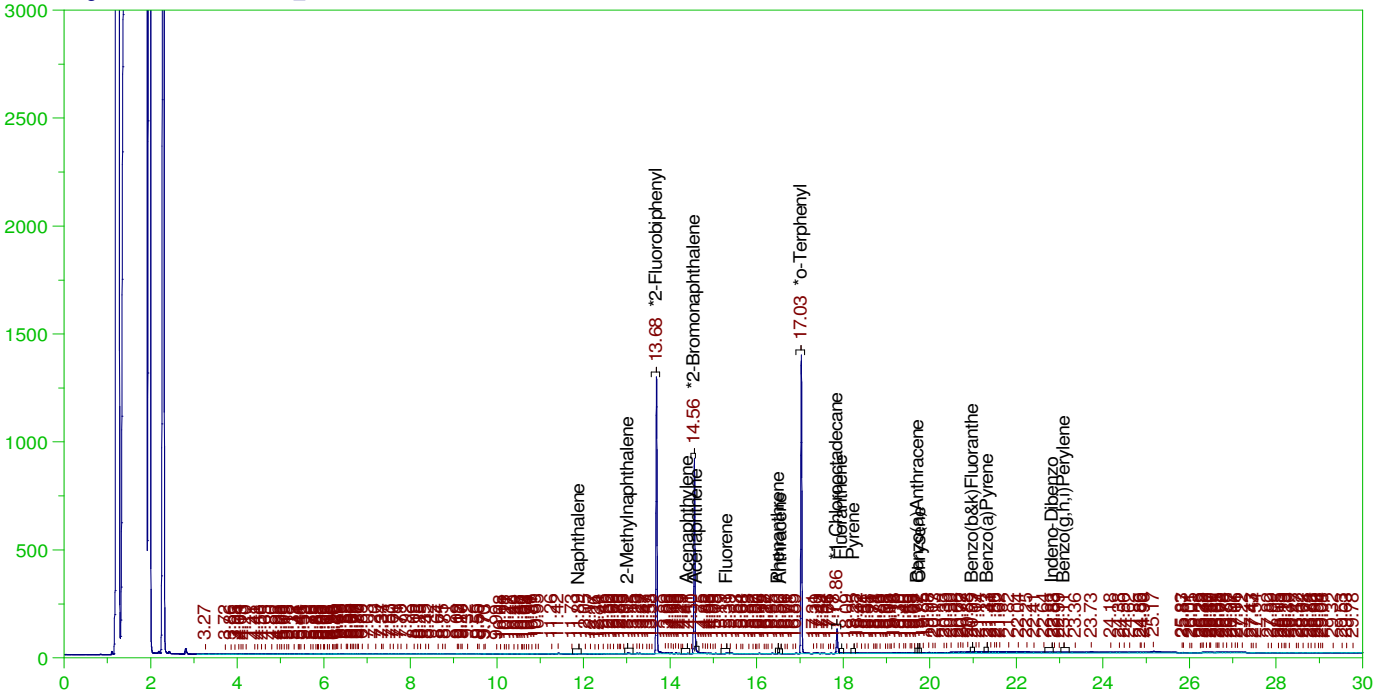
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	17.859	208.333	165.035	79.22	-

DRO Area:7476319 DRO Amount: 564.6558
TEH Area:1.524536E+07 TEH Amount: 1151.419

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:342510.6 C9-C18 Amount: 26.34068
C19-C36 Area:1.392588E+07C19-C36 Amount: 1037.81

MW-11 Batch ID: 105295

G:\org\HP4\DAT\HP4122116_b\1221HP4.0031.RAW B16121005-001B ;1221HP4 , $HC-ARO-GRP-W, V31



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B16121005-001B ;1221HP4 , $HC-ARO-GRP-W, V31
Raw File: G:\org\HP4\DAT\HP4122116_b\1221HP4.0031.RAW
Date & Time Acquired: 12/22/2016 9:05:01 AM
Method File: g:\org\HP4\Methods\RR_EPH-122131-CWb-L%.met
Calibration File: G:\Org\HP4\Cals\AR150824CWB.CAL
Sample Weight: 0.96 Dilution: 2 S.A.: 1

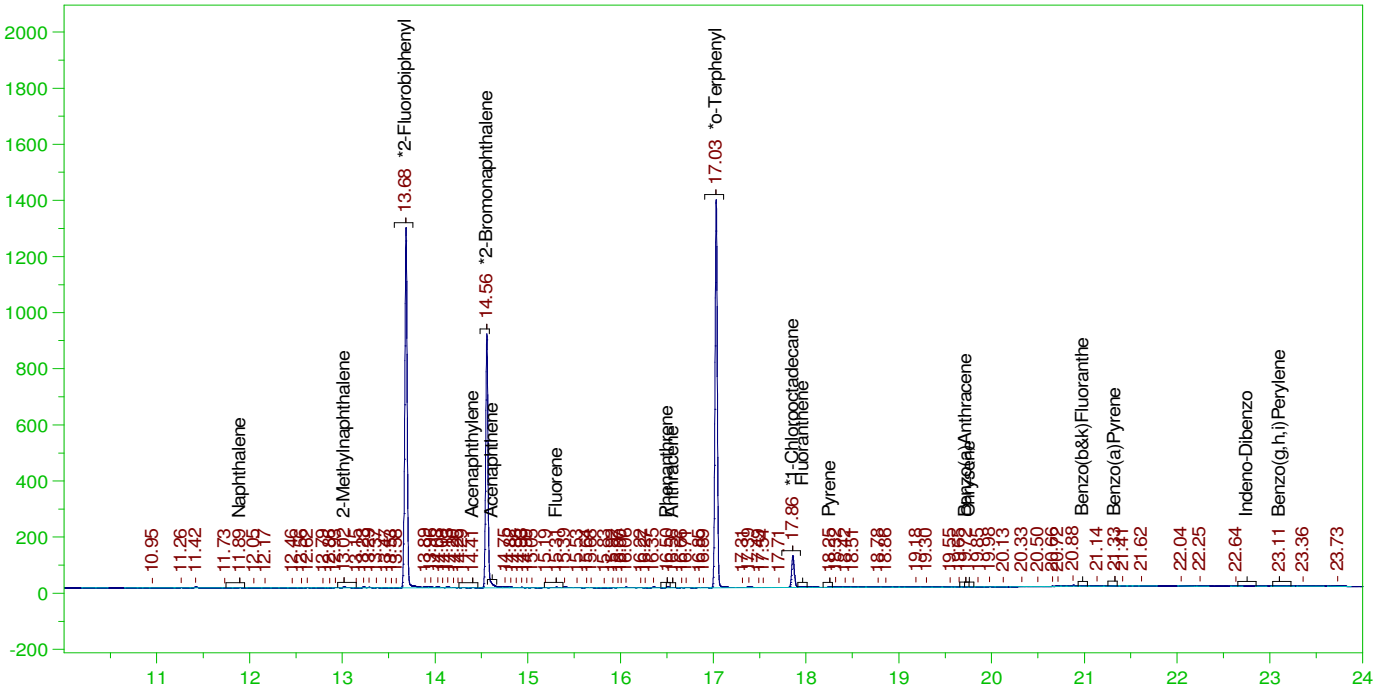
Mean RF EPH Aromatics: 28981.74
Rt range for EPH C11 to C22 Aromatics: 11.747 to 23.229

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.685	208.333	183.425	88.04	-
*2-Bromonaphthalene	14.558	208.333	190.717	91.54	-
*o-Terphenyl	17.03	208.333	168.985	81.11	-
*1-Chlorooctadecane	17.858	208.333	21.175	10.16	-

C11-C22 Aromatics Area:1275015 C11-C22 Aromatics Amount: 91.65361
EPH Aromatics total Area:2391932 EPH Aromatics Total Amount: 171.9424

MW-11 Batch ID: 105295

G:\org\HP4\DAT\HP4122116_b\1221HP4.0031.RAW B16121005-001B ;1221HP4 , $HC-ARO-GRP-W, V31



EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

Sample Name: B16121005-001B ;1221HP4 , $HC-ARO-GRP-W, V31
Raw File: G:\org\HP4\DAT\HP4122116_b\1221HP4.0031.RAW
Date & Time Acquired: 12/22/2016 9:05:01 AM
Method File: g:\org\HP4\Methods\RT_EPH-CWb-L%.met
Calibration File: G:\Org\HP4\Cals\AR150824CWB.CAL
Sample Weight: 0.96 Dilution: 2 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	11.893	11.893	11.893	4322	2.083	U
2-Methylnaphthalene	13.019	13.019	13.019	11179	2.083	U
Acenaphthylene	14.406	14.406	14.406	3587	2.083	U
Acenaphthene	.	.	.		2.083	U
Fluorene	15.306	15.306	15.306	8943	2.083	U
Phenanthrene	16.503	16.503	16.503	5729	2.083	U
Anthracene	16.561	16.561	16.561	1935	2.083	U
Fluoranthene	.	.	.		2.083	U
Pyrene	18.255	18.255	18.255	792	2.083	U
Benzo(a)Anthracene	19.724	19.724	19.724	1071	2.083	U
Chrysene	.	.	.		2.083	U
Benzo(b&k)Fluoranthe	.	.	.		4.167	U
Benzo(a)Pyrene	21.328	21.328	21.328	1599	2.083	U
Indeno-Dibenzo	.	.	.		4.167	U
Benzo(g,h,i)Perylene	23.106	23.106	23.106	1309	2.083	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.685	208.333	183.403	88.03	40-140
*2-Bromonaphthalene	14.558	208.333	190.766	91.57	40-140
*o-Terphenyl	17.03	208.333	168.907	81.08	40-140
*1-Chlorooctadecane	17.858	208.333	20.457	9.82	40-140

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8082A									Batch: 105209
Lab ID: MB-105209	Method Blank				Run: AECD.I_161215B				12/15/16 23:37
Aroclor 1016	ND	ug/L	0.50						
Aroclor 1221	ND	ug/L	0.50						
Aroclor 1232	ND	ug/L	0.50						
Aroclor 1242	ND	ug/L	0.50						
Aroclor 1248	ND	ug/L	0.50						
Aroclor 1254	ND	ug/L	0.50						
Aroclor 1260	ND	ug/L	0.50						
Aroclor 1262	ND	ug/L	0.50						
Aroclor 1268	ND	ug/L	0.50						
Surr: Decachlorobiphenyl			0.050	106	44	130			
Surr: Tetrachloro-m-xylene			0.050	80	40	110			
Lab ID: AR1254-105209	Laboratory Control Sample				Run: AECD.I_161215B				12/16/16 00:05
Aroclor 1254	9.49	ug/L	0.50	95	55	132			
Surr: Decachlorobiphenyl			0.050	105	44	130			
Surr: Tetrachloro-m-xylene			0.050	81	40	110			
Lab ID: B16121005-003AMB	Sample Matrix Spike				Run: AECD.I_161215B				12/16/16 06:38
Aroclor 1254	9.72	ug/L	0.50	97	55	132			
Surr: Decachlorobiphenyl			0.050	104	44	130			
Surr: Tetrachloro-m-xylene			0.050	80	40	110			
Lab ID: B16121005-003ADB	Sample Matrix Spike Duplicate				Run: AECD.I_161215B				12/16/16 07:06
Aroclor 1254	9.94	ug/L	0.50	99	55	132	2.2	40	
Surr: Decachlorobiphenyl			0.050	105	44	130			
Surr: Tetrachloro-m-xylene			0.050	84	40	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: NewFields
Project: Stimson Groundwater

Report Date: 12/22/16
Work Order: B16121005

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8082A									Analytical Run: R271998
Lab ID: 1660CK3	Continuing Calibration Verification Standard								12/15/16 22:41
Aroclor 1016	0.233	ug/L	0.50	117	80	120			
Aroclor 1260	0.218	ug/L	0.50	109	80	120			
Surr: Decachlorobiphenyl			0.050	115	80	120			
Surr: Tetrachloro-m-xylene			0.050	107	80	120			
Lab ID: 1254CK3	Continuing Calibration Verification Standard								12/15/16 23:09
Aroclor 1254	0.221	ug/L	0.50	110	80	120			
Surr: Decachlorobiphenyl			0.050	116	80	120			
Surr: Tetrachloro-m-xylene			0.050	109	80	120			
Lab ID: 1660CK6	Continuing Calibration Verification Standard								12/16/16 08:03
Aroclor 1016	2.22	ug/L	0.50	111	80	120			
Aroclor 1260	2.11	ug/L	0.50	105	80	120			
Surr: Decachlorobiphenyl			0.050	108	80	120			
Surr: Tetrachloro-m-xylene			0.050	106	80	120			
Lab ID: 1254CK6	Continuing Calibration Verification Standard								12/16/16 08:30
Aroclor 1254	2.10	ug/L	0.50	105	80	120			
Surr: Decachlorobiphenyl			0.050	110	80	120			
Surr: Tetrachloro-m-xylene			0.050	108	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

NewFields

B16121005

Login completed by: Gina McCartney

Date Received: 12/14/2016

Reviewed by: BL2000\tedwards

Received by: jlw

Reviewed Date: 12/16/2016

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	Not Applicable ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The Temperature Blank temperature for Cooler 1 was 5.1°C and Cooler 2 was 4.0°C.

ENERGY LAB
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	NewFields
Contact	Tyler Etzel
Phone	(406) 549-8270
Mailing Address	1120 Cedar Street
City, State, Zip	Missoula MT 59802
Email	tetzel@newfields.com
Receive Invoice	☐ Hard Copy ☒ Email
Receive Report	☐ Hard Copy ☒ Email
Purchase Order	350.0033.007
Quote	
Bottle Order	107838

Report Information (if different than Account Information)

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report	☐ Hard Copy ☐ Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other _____

Comments

* 2 Coolers associated with COC.

Project Information

Project Name, PWSID, Permit, etc.	Stimson Groundwater
Sampler Name	Heather Grotbo
Sampler Phone	(406) ~~556~~ 465 7661
Sample Origin State	MT
EPA/State Compliance	☐ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	MDEP-EPH-98	SW-8082 PCBs	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 MW-11	12/13/16	1245	3	W	X	X			B1612100500 1
2 MW-13R	12/13/16	1127	3	W	X	X			-002
3 MW-19	12/12/16	1335	3	W	X	X			-003
4 MW-20	12/12/16	1140	3	W	X	X			-004
5 MW-21	12/12/16	1720	3	W	X	X			-005
6 MW-23	12/13/16	1022	3	W	X	X			-006
7									
8									
9									
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Heather Grotbo	12/13/16 1600	Heather Grotbo			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Jodi Warren	12/14/16 935	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

BOTTLE ORDER 107838

SHIPPED TO: NewFields

Contact: Heather Grotbo
1120 Cedar St
Missoula MT 59802-3911
Phone: (406) 549-8270
Project:

Order Created by: Wynn Pippin
Shipped From: Billings, MT
Ship Date: 11/29/2016
VIA: Ground

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
(6 Sets)							
1 Liter Amber Glass Narrow Mouth	2	SW8015M	Hydrocarbons, Extractable Petroleum Screen		☐ H2SO4		1
1 Liter Amber Glass Narrow Mouth	1	SW8082A	Polychlorinated Biphenyls (PCB's)				1

■ HNO3 - Nitric Acid ☐ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide
■ ZnAc - Zinc Acetate ■ HCl - Hydrochloric Acid ☐ H3PO4 - Phosphoric Acid

We strongly suggest that the samples are shipped the same day as they are collected.

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets

Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.