VCRA Guide Checklist

This checklist includes all the elements to a complete VCP and is organized to coincide with the sections of the VCRA Guide. If an element is not included in the submitted VCP, its absence should be explained in the narrative.

Environmental Assessment (EA)

☐ **Applicant has reviewed both Section 1 and 2 of the VCRA Guide**

2.0 ENVIRONMENTAL ASSESSMENT

2.1 Introduction: (additional information may also be found in Section 1.0 of the VCRA Guide)

- ☐ Facility name and general location;
- ☐ Name and address of applicant submitting the VCP (and owner if different);
- ☐ Statement indicating whether the facility is on the CECRA Priority List;
- ☐ In general, type and source of contamination;
- ☐ An agreement to reimburse DEQ costs.
- ☐ Statement indicating that the facility is eligible for voluntary cleanup procedures per the criteria discussed in Section 2.0 of the VCRA guide;
- ☐ Information indicating the EA has been prepared by a qualified environmental professional;
  - ☐ Include all qualifications in an Appendix to the EA. The RP can reference back to that information.
  - ☐ If the RP is prepared by a different professional, include those qualifications in an Appendix to the RP.

2.2 Legal Description and Map:

- ☐ Include county, city, or distance to nearest city; street address; township, range and section; and latitude and longitude;
- ☐ Map to scale identifying the location and size of the facility and relevant features such as property boundaries, surface topography, surface and subsurface structures, and utility lines;
- ☐ Copies of property deeds should be included as an appendix.

2.2.1 Written Consent of Current Owners: The written consent of current owners of the facility or property for access to the facility by the applicant and its agents and DEQ, and any other sampling or activities necessary for completion of the EA.

2.3 Physical Characteristics of the Facility: (includes all areas where contamination has come to be located) and areas contiguous to the Facility including:

- ☐ Topography;
- ☐ Stratigraphy;
- ☐ Structural geology;
- ☐ Regional groundwater flow patterns;
- ☐ Groundwater aquifers;
- ☐ Hydraulic conductivity;
- ☐ Floodplain designation;
- ☐ Climatological data, including wind speed and direction;

- All surface water bodies and wastewater discharge points;
- Groundwater monitoring and supply wells;
- Surface water intakes;
- Aquatic and terrestrial habitats;
- Sensitive environments (e.g., wetlands);
- Physical features such as buildings or roads;
- Facility process units and loading docks;
- Chemical and/or fuel transfer and pumping stations;
- Current and historic railroad tracks and railcar loading areas;
- Surface and storm water run-off retention ponds and discharge points;
- Building drainage or wastewater discharge points;
- Spill collection sumps and/or drainage collection areas;
- Wastewater treatment units;
- All underground and above ground storage tanks;
- Underground and above ground piping;
- Water cooling systems and/or refrigeration units;
- Sewer lines;
- Underground utility lines and buried cables;
- French drain systems;
- Water recovery sumps and building foundations;
- Surface impoundments;
- Waste storage and/or disposal areas/pits, landfills etc.;
- Chemical and/or product storage areas;
- Septic leach fields (drain fields);
- Irrigation ditches and/or irrigation systems;
- Dry wells and/or waste disposal sumps; and
- A list of all the other impacted facilities (CECRA, federal superfund, leaking underground storage tank, contaminated groundwater, hazardous waste, etc.) within one-quarter mile of the facility.

2.4 Area Wells: Provide a description of all wells at the facility or within a one-half mile radius of the facility, including:

- A list of all wells identifying the use, depth, geologic formation/aquifer and yield of those wells;
- A map to scale using geographic references showing the locations of these wells;
- Documentation of any efforts to verify the presence or absence of unregistered wells; and
- A list providing all available well construction information, ownership, address, driller, date drilled, static water level, well construction design, well logs, and field notes.

2.5 Groundwater and Surface Water Usage: Provide a description of the current and reasonably anticipated future use of onsite ground and surface water, including:

- Suitability of water for beneficial uses;
- Historical land and water uses;
- Anticipated future land and water uses;
- Community and nearby property owners' concerns regarding future water use;
- Regional and local development patterns;
- Regional and local population projections;

- Availability of alternate water sources including, but not limited to, public water supplies, groundwater sources, and surface water sources;
- Specific conductivity and class of the groundwater.; and
- Classification of any steams or rivers on or near the facility.

2.6 Operational History of the Entire Facility: Provide a description of the following:

- Records, dates, and descriptions of past and current operations, activities, conditions or incidents at the facility or nearby facilities that may have resulted in a release or threatened release of a hazardous or deleterious substance;
- Complete ownership history of all property comprising the facility;
- Copies of deeds/easements;
- Readily available aerial photographs;
- Building department records;
- A description of all activities or businesses that occupied the facility as far back as typical historical records and knowledge allows, including years of operation;
- A description of any historical records including county clerk and recorder and tax assessor records, Polk directories, and Sanborn fire insurance maps (include copies of easily obtainable, relevant documents in an appendix);
- Diagrams of facility operations (e.g., railroad facility maps, permitted activity diagrams);
- The dates that the activities occurred and the dates during which the hazardous or deleterious substances may have been released into the environment;
- The approximate volumes of the materials released;
- A description of past and current waste disposal practices and areas;
- A list of any known hazardous or deleterious substances used at the facility, with volume estimates and a list of all wastes generated at the facility, including manifests for disposal;
- References and information about the sources of the operational history, including a brief description of the efforts made to research various informational sources;
- A description of the current use of the facility;
- Current hazardous or deleterious substance usage;
- Current waste disposal practices;
- Registries or publicly available lists of engineering controls; and
- Registries or publicly available lists of institutional controls, including environmental land use restrictions.

2.7 Current and Future Facility Use: Describe the current and reasonably anticipated future uses of the facility and immediately adjacent properties by analyzing likely future land or resource uses that take into consideration the following:

- Local land and resource use regulations, ordinances, restrictions, or covenants;
- Historical and anticipated uses of the facility;
- Patterns of development in the immediate area; and
- Relevant indications of anticipated land use from the owner of the facility and local planning officials.

2.8 Regulatory and Compliance History: Provide a description of the following

- List of all local, state, and federal environmental permits obtained for the facility;
- Information on permit violations, notices to take corrective action, or similar issues for each of these permits;
- List all facility-specific notifications made as a result of any management activities of hazardous substances conducted at the facility, including any and all EPA identification numbers obtained for management of hazardous substances at the facility from either the state or the EPA and any conditionally exempt small quantity generator determinations;
- List all notifications made to state and/or federal agencies reporting spills and/or accidental releases and any actions taken to address those spills/releases, including confirmation sample results;
- A description of any actions taken under any regulatory authority (CECRA, CERCLA, RCRA, WQA, CWA, etc.) at the facility (e.g., notice letters, proper and expeditious letters, or orders); and
- A description of any private or agency litigation associated with the facility; and
- A description of any controlled allocation of liability act actions related to the facility.

2.9 Facility Characterization:

2.9.1 Characterization Information:

- A narrative describing methods and results from all investigations characterizing nature and extent of any releases or threatened releases of hazardous or deleterious substances that have occurred at the facility. The investigations should characterize the entire facility including surface soils, subsurface soils, sediment, air, soil gas, vapor intrusion, groundwater, and surface water, as applicable;
- A table of contaminants indicating which media is contaminated and estimated extent of that contamination;
- A data summary discussion and table of the samples collected by media, including identification of all analyses for that media. These data tables should also include comparison to generic screening levels;
- A map indicating all potential source areas, areas and concentrations of hazardous or deleterious substances, previous, hazardous or deleterious substance treatment, and storage or discharge areas;
- Site conceptual model of sources showing potential migration pathways;
- Describe the chemical nature, mobility and toxicity of the hazardous or deleterious substances, estimated volumes and concentrations of substances discharged at each area, discharge point, drain, or leakage point (if available);
- Map drawn to scale showing groundwater elevation and groundwater flow direction;
- Discussion of all hydraulic tests performed at the facility or nearby to characterize the hydrogeologic properties of any aquifers in the area;
- Discussion of how all environmental samples/data were collected, including:
  - The rationale involved in sampling locations, parameters, and methodology;
  - A description of sampling locations;
  - Well construction details (showing screened interval, casing type, gravel pack interval, bentonite seal thickness and cemented interval) and lithologic logs;
  - Test-pit and borehole logs;
  - Quality assurance/quality control measures associated with the sampling and analysis;
  - Data validation of sample results including a brief discussion of the quality of the data;
  - Sampling frequency and locations;

- The use of EPA-approved analytical methods with appropriate method detection limits. Detection limits must be low enough for comparison with appropriate screening levels or cleanup levels; and
- Include the laboratory data and data validation reports as an appendix.

- Discussion of any remedial actions already performed at the facility (especially important for "no further action" VCPs), including:
  - A description and figure of the location of contaminants of concern (COCs);
  - A description and figure of the area of the remedial action and confirmation samples;
  - The method employed to carry out the remedial action;
  - Assessment of, methodology, analytical methods, and frequency of confirmation samples;
  - Description of the disposition of all contaminated media; and
  - Comparison of confirmation samples to screening/cleanup levels which were used to verify the effectiveness of the remedial action. If site-specific cleanup levels were calculated, a discussion of calculation methods and assumptions used should be included.

2.9.2 Screening Contaminants of Concern: All contaminants must be screened against generic screening levels to determine the COCs for the Facility. This section should include:

- Surface water and groundwater concentrations must be screened against the most current DEQ-7 standards, RBSLs, or tapwater RSLs;
- Drinking water must be compared to the MCLs;
- Dry weight sediment concentrations must be compared to the most current EPA Region 3 BTAGs;
- Dry weight soil concentrations must be screened using DEQ's Soil Screening Process found on DEQ's website at http://deq.mt.gov/Land/StateSuperfund/resources; and
- Soil-gas, sub-slab, and indoor air concentrations must be screened against the most current EPA RSLs for residential air and the Montana APH generic screening levels.

2.10 Human and Environmental Exposure: Description of the human and environmental exposure to releases or threatened releases of hazardous or deleterious substances at the facility based upon the current use of the facility and adjacent properties and any reasonably anticipated future uses of the facility;

- Provide a site conceptual exposure model (SCEM) and a visual diagram SCEM. Include a narrative for the current and reasonably anticipated future use of the facility that indicates the facility-specific contaminant sources (e.g., underground tanks, sewer lines, etc.), release mechanisms, transport routes and media, and potential receptors;
- Include a table or list of site contaminants indicating which media are contaminated and the estimated vertical and areal extent of contamination in each medium;
- Include an Occurrence, Distribution, and Selection of Chemicals of Potential Concern (ODSCOPC) table with the following information: COCs minimum concentration, maximum concentration, location of maximum concentration, detection frequency, range of detection limits, sample concentration used for screening, generic screening level and source, site-specific screening level (if appropriate) and source, if the chemical is a COC, and the rationale for this decision;
- Discuss and evaluate ecological receptors;
- Provide an evaluation of the soil leaching to groundwater pathway. All soil cleanup levels must be protective of groundwater;
- If volatile compounds are present at the facility, evaluate vapor intrusion to indoor air; and

- “No further action” VCPs must include a demonstration that the current condition of the facility meets all appropriate cleanup levels and that no further remedial action is necessary to achieve cleanup goals.

2.11 Facility Maps, Figures, and Photographs: The following is a list of maps, figures, and photographs that should be included where appropriate. These maps, figures, and photographs may be combined where appropriate.

- **Site/Facility Location Map**
  - Portion of the USGS 7.5’ Quadrangle depicting the site/facility location;
  - Facility boundary;
  - Surface water bodies; and
  - Topography.
- **Aerial Photographs:** Current and all historical readily available aerial photographs.
- **Site/Facility Plan View Map(s)**
  - Location and size of Facility;
  - Property boundaries;
  - Facility boundary;
  - Surface topography;
  - Surface & Subsurface structures;
  - Utility lines;
  - Above- or below- ground tanks;
  - Surrounding, nearby, and/or impacted properties;
  - Physical characteristics;
  - All Facility wells within one-half mile radius (including a description of use);
  - Potential source areas and concentrations of hazardous or deleterious substances; and
  - Potentially impacted receptors.
- **Sample Location Map(s)**
  - Depict locations of all monitoring wells;
  - Soil borings and test pits;
  - Soil gas;
  - Groundwater survey probes;
  - Surface and subsurface samples;
  - Surface water and groundwater (including residential, commercial, and public water supply) samples; and
  - One map should include (as a base layer) the highest quality or most current color orthophoto with georeferenced Sanborn map information and/or any other site/facility historic blueprint/map information overlain with all labeled sample locations to assist in the identification of historic sources and operations. (This map is typically a 24”x26” map to allow for greater site detail).
- **Potentiometric Surface Map(s)**
  - Includes depicting the potentiometric groundwater surface during high and low water table;
  - Data such as static water level elevations (expressed as feet above Mean Sea Level); and
  - Arrows depicting groundwater flow direction.
- **Geologic Cross Sections**
  - Show site stratigraphy through full depth of potentially impacted water-bearing units;
  - A minimum of three cross-sections per site (i.e. one parallel to groundwater flow direction and two perpendicular to flow direction and/or skewed to align with actual well/boring sample locations); and

- Indicate contaminant location, monitoring wells depicting their screened intervals, and subsurface conduits/piping, etc., depicting the subsurface of the property.

Soil Contamination

- Isoline map depicting soil analytical data. Include at least three labeled isolines for each contaminant (one identifying the area of sampling method detection limit exceedance, one identifying each applicable standard and/or screening level (i.e. RBSL, RSL, etc.) exceedance, and one identifying areas of increased concentrations.

Groundwater Contamination Isoconcentration Map(s)

- Isoline map depicting the extent and degree of groundwater contamination; and
- Include at least three labeled isolines for each contaminant (one identifying the required reporting value identified in DEQ-7, one identifying each applicable standard and/or screening level (i.e. MCL, DEQ-7, RBSL) exceedance, and as many isoconcentrations as necessary to demonstrate the range of dissolved concentrations).

Separate Phase Product Isoline Map(s)

- If separate phase product is encountered, a map depicting product extent and thickness should be provided. Include at least three labeled isolines for each separate phase product (one identifying the edge of measurable product thickness; then as many isolines as necessary to demonstrate the range of thickness encompassed by the plume).

Facility Contaminant Affected Area Map

- Map of all identified contaminant isoline areas (for all media in both the surface and subsurface) color-coded to distinguish different contaminant areas/media. All sample locations should be labeled and included, contaminant source locations should be identified, as well as other pertinent features.

Please ensure that all relevant Figures, Tables, and Appendixes included in Environmental Assessment are also included in the Remediation Proposal.

Remedial Proposal (RP):

- **Applicant has reviewed both Section 3 and 4 of the VCRA Guide**

3.0 REMEDIATION PROPOSAL

- Once DEQ determines that the EA component of VCP is complete, the applicant may submit the RP component.
- Verify the RP was prepared by a qualified environmental professional (include qualifications in an Appendix).
- This section of the VCP should include the information described in Section 3 of the VCRA guide.

3.1 Introduction: Include the following information:

- Facility name and general location;
- Date that the EA was deemed complete by DEQ;
- Statement indicating if the VCP addresses the entire facility or only a portion (if so what portion);
- Anticipated length of time needed to complete the cleanup (e.g. "No Further Action", 6 months, 2 years, 5 years; must be 60 months or less, except for groundwater, which must be 120 months or less);
- Verification of Facility Conditions;
- Written consent from current owners to implementation of the VCP;
- Review of COCs; and
- A detailed description of all actions that have occurred between completion of the EA and the submittal of the RP.

3.2 Cleanup Levels: Identify the proposed cleanup levels for the facility and how they were derived:

- Background cleanup levels;
- Established generic screening levels;
- Facility-specific adjusted screening levels;
- Facility-specific risk-based cleanup levels; and
- Facility-specific leaching to groundwater cleanup levels.

3.3 Remedial Alternatives Comparison: This section requires a brief comparison of several remediation alternatives. This section of the VCP should include:

- Text providing a brief description of each alternative, and a discussion regarding how each alternative would or would not meet each of the seven criteria from section 75-10-721, MCA;
  - Protectiveness;
  - Compliance with ERCLs;
  - Mitigation of risk;
  - Effectiveness and reliability;
  - Practicability and implementability;
  - Use of treatment or resource recovery technologies; and
  - Cost-effectiveness.

- A summary table providing a comparison of the proposed remedy to other reasonable alternatives based on the seven criteria. This section is meant to provide a truncated feasibility study type analysis.

3.4 Proposed Cleanup Plan: The RP must provide a detailed description of all components of the cleanup plan.

- Remediation system design diagrams showing how the system will be constructed in the field;
- A map identifying areas to be remediated, the area where the remediation system will be located, the locations of confirmation samples, the locations of monitoring wells, areas where contaminated media will temporarily be stored/staged and areas not requiring cleanup;
- Sufficient information to determine if the applicant will be capable of completing the VCP within the 60-month time requirement (120 months for groundwater); and
- "No further action" VCPs must include a statement that no further remedial action is required at the facility to meet the requirements specified in § 75-10-721, MCA.

3.4.1 Waste Management: Include a discussion of whether or not a hazardous waste will be generated and the volume of this material. If applicable, the RP should describe the sampling program that will be used to verify that the material is not a hazardous waste or that treatment of the contaminated media has resulted in a non-hazardous waste.

3.4.2 Implementation of the VCP: the RP should include a discussion of:

- **Confirmation Sampling Plan:** The confirmation sampling plan should describe the sampling program that will be used to verify clean-up levels and includes:
  - A discussion of the number, location, and type of samples to be collected;
  - Collection methods and analytical methods that will be used;
  - A brief reference to the approved cleanup levels;
  - Any RCRA contained-out determinations; and
  - A discussion of what quality assurance/quality control (QA/QC) documentation will be followed.
- **Backfill:** A backfill approval request letter should be submitted for DEQ approval, for all proposed backfill and borrow source material, **before** backfilling takes place. A backfill approval request letter should include the following:
  - A description and map of the backfill source material clarifying proximity of source to other contaminated facilities and analyses to be used;
  - A discussion of the number and type of samples collected and the quantity of material that will be used as source material;
  - A discussion of the sample results verses DEQ background, cleanup, or generic screening levels; and
  - Proper QA/QC documentation, including a complete data validation checklist/report, copies of all laboratory results, and a completed chain of custody with the laboratory's sample receipt checklist.
- **Revegetation**: the RP should not include detailed information about planned redevelopment activities but should include discussion of:
  - Recontouring/grading, including final slope and aspect, drainageway reconstruction, and erosion control methods;
  - Coversoil/topsoil, including soil source, soil texture, percent rock fragments, and percent organic matter;

- Seedbed preparation, including depth of tilling and equipment to be used;
- Amendment application, including fertilizer, mulch, or other amendment application rates;
- Seeding/planting, including seed mixes and sources; and seeding rates, techniques, times, and transplants;
- Submit revegetation plan to, and receive approval from, the county weed control board.
- Reference area delineation or description of vegetation typical of the surrounding area;
- Monitoring, including monitoring and reporting frequency, and sampling methods; and
- Description of reference areas or vegetation typical of the surrounding area needs to provide adequate information for DEQ to be able to assess vegetation success according to the following criteria:
  - Percent vegetation cover by species (current year's growth, including noxious weeds);
  - Percent total vegetative cover (current year's growth, not including noxious weeds);
  - Percent litter (litter plus rock over 2 inches in diameter);
  - Percent bare ground;
  - Herbaceous production;
  - Shrub density (if applicable);
  - List of species (observed anywhere within the seeded area); and
  - Discussion of the gradation and organic content of topsoil.

3.4.3 Operation and Maintenance: The RP O&M plan should include, at a minimum:

- How the system will be optimized and operated to ensure that it functions as designed without interruptions; and
- A sampling program that will be used to monitor its effectiveness in achieving the desired goal.

3.4.4 Sampling or Treatability Studies:

- The RP should include a description of any sampling or treatability studies required before or during the implementation of the VCP.

3.5 Project Schedule:

- A timetable for implementing the RP and for any necessary monitoring of the facility after the proposed measures are completed
- Voluntary cleanups must be initiated within 12 months of approval of the VCP and completed in 60 months or less (120 months or less for groundwater), excluding O&M.

3.6 Health and Safety Regulations:

- A statement that applicable health and safety regulations will be met during implementation of the RP.

3.7 Minimization of Short-Term Disturbances:

- A description of how short-term disturbances during implementation of the RP will be minimized

3.8 Permits

- Identification of any permits necessary to conduct the work.
- Provide copies of the permits to DEQ before initiation of remediation

4.0 CONSTRUCTION COMPLETION REPORT: Within 60 days after completion of the VCP (including established revegetation), the applicant shall provide to DEQ the following:

A certification in letter form from a qualified environmental professional that the VCP has been fully implemented (including initiation of any required O&M or ICs);

A construction completion report including:

- A list of all COCs along with the remaining concentrations;
- Any deviations from the approved RP and copies of DEQ's approval of those deviations;
- Any material changes or difference from either the EA or the RP VCP;
- Final construction diagrams and pertinent figures and drawings of all remedial systems;
- Disposal manifests;
- Confirmation sampling locations, sample results and laboratory data packages, data validation reports of the confirmation sampling, and comparison to approved VCP cleanup levels;
- Copies of all field logbooks and photographs taken during implementation of the RP;
- Documentation of revegetation with photos;
- Discussion and scheduling of any long-term O&M or engineering controls;
- A copy of all recorded ICs;
- Any VCP Amendments; and
- Any other documentation necessary for DEQ to determine if the VCP has been fully implemented.