ATTACHMENT B
REMEDIAL DESIGN/REMEDIAL ACTION
SCOPE OF WORK

I. SCHEDULE AND OBJECTIVES

Within 45 days of issuance of the Consent Judgment, Respondent shall submit for DEQ review and comment a draft work plan for Remedial Design and Remedial Action (RD/RA) at the facility. Within 30 days of receipt of DEQ's written comments on the draft RD/RA Work Plan, Respondent shall submit to DEQ for approval a final RD/RA Work Plan addressing DEQ's comments.

The objectives of the RD/RA are to attain the degree of cleanup of hazardous substances and control of further release of hazardous substances as established in the Record of Decision (ROD). The objectives are consistent with the requirements set forth in the Environmental Cleanup Rules, Oregon Administrative Rules (OAR) 340-122-0010 to 0110, and the Environmental Cleanup Laws, Oregon Revised Statutes (ORS), Chapter 465.

II. REMEDIAL DESIGN AND REMEDIAL ACTION DELIVERABLES

A. RD/RA WORK PLAN

The RD/RA Work Plan shall be developed in conformance with DEQ's ROD dated January 2017; this Scope of Work; and as appropriate, EPA's "Superfund Remedial Design Remedial Action Guidance," OSWER Directive 9355.0-4A, 1986; "Guidance on Expediting Remedial Design and Remedial Action," OSWER Directive 9355.5-02; and any additional guidance documents as directed by DEQ.

The RD/RA Work Plan shall be prepared for all activities to be conducted during remedial design and remedial action and shall include, at a minimum, the following items:

1. Description of proposed RD/RA tasks and activities to be performed.
2. Proposed schedule for submittal of RD/RA deliverables and implementation of all proposed RD/RA activities.
3. Identification and description of duties, responsibilities, authorities, and qualifications of the personnel involved in the remedial design and remedial action.
4. Project organization and identification of reporting relationships, lines of communication, and authorities.
5. Summary of the selected remedy and cleanup levels.
6. General description of remedial actions to be performed.
7. Identification and description of design objectives.
8. Identification and description of design criteria and performance standards that shall be applied to the remedial activities to be conducted by Respondent.
9. Identification and listing of federal, state, or local laws, regulations, or guidance applicable to or associated with the remedial action and an explanation of how they will be incorporated into the design and implementation of the remedial action.

10. Assessment of permitting requirements, including identification of any permitting or procedural requirements exempted pursuant to ORS 465.315(3) (as stated in the ROD or Consent Order, or as proposed to be exempted), and a plan for satisfying any applicable substantive or non-exempted permitting/procedural requirements. A description of permitting requirements shall be included in the specific design reports.

11. Identification of any off-site disposal facilities and requirements for disposal, if any.

12. Identification and description of any site access agreements required to implement RA activities.

13. Description of any proposed bench scale or pilot scale studies, treatability studies, or unit process evaluations. Include study objectives and a schedule for submittal of a more detailed work plan describing design parameters, data requirements, size and scale, mobilization procedures, and schedule for conducting the tests.

14. Identification and description of additional sampling, evaluations, or engineering studies required to supplement available technical information.

15. Identification and description of any property, utility, right-of-way, topographic, or other site surveys required.

16. Description of any special design/implementation problems anticipated and how they will be addressed. Include any special technical problems, anticipated community relations problems, access, easements, rights-of-way, transportation, utilities, and logistics problems.

17. Identification and description of institutional controls to be imposed during and/or after remedial action activities.

18. Description of construction methods and equipment to be used.

19. Procedures for documentation/validation of remedial action activities.

B. SAMPLING AND ANALYSIS PLAN (SAP)

If the proposed RA requires analytical testing for remedial design or verification purposes, a draft Sampling and Analysis Plan (SAP) shall be prepared and submitted for DEQ review and comment. A final SAP shall be submitted for DEQ approval addressing DEQ’s comments on the draft SAP.

The SAP shall be prepared for all proposed sampling and monitoring activities to be conducted during the remedial design and remedial action phases, such as treatability studies, bench and pilot scale studies, and engineering evaluations. The SAP shall also address confirmation sampling to be conducted following excavation, treatment or other remedial activity, to verify that the remedial action requirements and specified cleanup levels have been attained. This SAP need not address
long-term groundwater and surface water monitoring, which is addressed in Item F, Monitoring, Performance Evaluation, and Contingency Plan.


The SAP shall include, at a minimum:

1. Proposed sampling locations, frequency, parameters, and rationale.

2. A description of sample collection techniques, sampling equipment, sample handling, and decontamination procedures.

3. A description of proposed analytical or test methods.

4. A description of quality assurance and quality control (QA/QC) procedures for both field and laboratory activities, including a data quality objectives plan. For each target compound (e.g., Cr(VI), lead and mercury), compare the method reporting limit and the remedial action standard established in the ROD, for each applicable environmental medium.

5. A description of documentation and data reporting, including a proposed schedule for data report submittals.

6. A description of data analysis and interpretation methods, including statistical methods, sensitivity methods, or mathematical models for:
   i. Evaluating attainment of remedial action cleanup levels.
   ii. Evaluating bench or pilot scale tests for full-scale application of the technology.

7. A description of residuals management procedures.

If field or lab studies are proposed during the remedial design phase, then the SAP shall be submitted with the RD/RA Work Plan, addressing those activities to be conducted during the remedial design phase.

C. PRE-FINAL DESIGN

The Pre-final Design Report shall contain a compilation of major design items reflecting an approximate 90% completion. This report shall serve as the draft design report and may constitute construction-ready drawings for a design/build process. The report shall contain the following, as applicable:

   a. Design criteria/standards.
b. Final design/analyses calculations.

c. Drawing index and final drawings.

d. Final specifications.

e. Final construction schedule.

f. Detailed description of remedial action activities to be performed, including methods and equipment for:

i. mobilization.

ii. site preparation.

iii. excavation.

iv. demolition, clearing, and removal of buildings, structures, equipment, vehicles, existing pavement, foundations, and floors, as applicable.

v. site restoration, including backfilling and grading.

g. Estimates of soil volumes to be excavated, or volume of media to be treated.

h. Detailed site layout drawings, delineating the areas to be excavated or treated.

i. Excavation methods, including area delineation, slope stabilization, characterization and management of excavated materials, dewatering and water management, and incorporation of confirmation sampling.

j. Description of permitting requirements, if any, to include:

i. construction/operating permits required.

ii. permitting authorities and specific permit requirements.

iii. permit application processing procedures, schedule, and fees.

iv. monitoring and compliance testing requirements.

k. Identification and description of construction quality assurance/quality control (QA/QC) program requirements and procedures for construction QA/QC program implementation.

l. Equipment startup and operator training requirements to include:
i. contractor/vendor procedures for providing appropriate service visits by experienced personnel to supervise installation, adjustment, startup, and operation of treatment systems.

ii. identification of appropriate operational procedures training for personnel.

m. Description of proposed control measures to minimize releases of hazardous substances to all environmental media during construction or installation activities.

n. Description of proposed surface water runoff control measures during construction.

o. Identification and description of dust control and noise abatement measures to minimize and monitor environmental impacts of construction or installation activities.

p. Identification and description of any site security measures necessary to minimize exposure to hazardous situations during remedial action.

q. Identification and description of transportation requirements, including haul route selection, load limits, truck haul schedule, restricted routes, traffic control needs, accident prevention and response, and decontamination.

r. Summaries of treatability studies, bench scale or pilot scale studies, or other engineering studies conducted during the design phase, including results and conclusions.

s. Land disposal requirements to include:

i. identification and description of off-site land disposal facilities.

ii. specific treatment/disposal requirements.

D. **FINAL DESIGN**

The Final Design Report shall incorporate required revisions resulting from DEQ's review and comments on the Pre-final Design Report. The Final Design Report shall provide the basis for the remedial action activities to be undertaken at the facility. The Final Design Report shall include the elements described above, plus draft bid packages for construction contractors, as necessary.

E. **RD/RA SITE HEALTH AND SAFETY PLAN**

A site-specific Health and Safety Plan (HASP) will be prepared that addresses potential site hazards including risks associated with heavy equipment and workers exposure to hexavalent chromium in soil through inhalation or incidental ingestion. Water will be used as dust suppression to minimize inhalation and incidental ingestion, and to prevent migration of soil particles onto adjacent tax lots.
Contaminant levels are below human health risk-based concentrations for site workers. However, site workers must have received awareness level training on general procedures to avoid exposure, such as hand washing procedures, minimizing dust, etc.

The HASP shall include at a minimum:

1. Scope and applicability of plan.
2. Identification of key personnel.
3. Task/operation safety and health risk analysis for each site task and operation, including a description of known hazards and risks and procedures for addressing potential risks (e.g., traffic, heavy equipment, soil contaminated with hexavalent chromium, lead, and/or mercury).
4. Personal protective equipment to be used (e.g., hard hat, steel-toed boots, eye protection).
5. Site control measures, including communication, site security, and work zone delineation.
6. Emergency response/contingency plan, including contact information and map to the nearest hospital.

F. PROJECT COMPLETION (CONSTRUCTION COMPLETION) REPORT

At the completion of the remedial action construction phases, Respondent shall prepare a draft Project Completion (Construction Completion) Report for DEQ review and comment. A final Project Completion Report shall be submitted for DEQ approval addressing DEQ’s comments on the draft report. The Project Completion Report shall include, at a minimum:

1. Results of the final inspection, including a brief description of any problems discovered during the final inspection and the resolution of those problems, as necessary.
2. A summary of work conducted in accordance with the approved plans and specifications, as-built drawings showing the extent of hardscapes, buildings and soil capped areas, remediated areas, and certification by an Oregon-Registered Professional Engineer that the work was performed in accordance with all approved plans and specifications.
3. Explanation of any modifications to the approved plans and specifications and why these modifications were necessary.
4. Copy of final permits, as applicable.
5. Results of verification sampling (if applicable), including data validation, and certification that the required remedial action criteria have been attained, and/or sampling results verifying that the remediation performs according to design specifications, as appropriate.
6. Explanation of any additional inspections, operation, and maintenance activities (including monitoring) to be undertaken at the site.
7. Unique tax lot identification of sub-divided lots that have been remediated.