

## **MODULE V - POST-CLOSURE GROUNDWATER CORRECTIVE ACTION**

### **V.A. POST-CLOSURE CORRECTIVE ACTION PROGRAM**

- V.A.1. The Permittee shall maintain a corrective action program as specified in R315-264-100. The purpose of this program shall be to remove or treat hazardous constituents in the groundwater and to monitor the migration of the hazardous constituents as outlined in Module IV. The corrective action program shall follow the requirements of R315-264-90, and this permit. The corrective action program is intended to be flexible and iterative; therefore, elements of the Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI) may be combined or removed by the Permittee with the written approval of the Director.
- V.A.2. As part of the corrective action program, the Permittee shall maintain the groundwater flow and contaminant transport model approved by the Director. In accordance with R315-101, the Permittee shall continue to develop a human-health risk assessment until approved by the Director in writing.
- V.A.3. In accordance with R315-101, the Permittee shall continue to develop an ecological risk assessment until approved by the Director in writing.

### **V.B. CORRECTIVE MEASURE(S) STUDY**

- V.B.1. The Permittee shall submit a CMS to the Director for approval no later than ninety (90) days after approval of both the human-health and ecological risk assessments. The CMS shall include the following elements:
- V.B.1.a. An introduction describing the overall purpose of the CMS;
- V.B.1.b. A summary on the current conditions of the contaminant plume in the Area of Compliance, the findings of the groundwater flow/contaminant transport model and risk assessments;
- V.B.1.c. Corrective measure objectives, including proposed media cleanup standards;
- V.B.1.d. An evaluation of potential corrective measure technologies which includes an assessment of the long-term reliability, effectiveness and implementability of the alternatives;
- V.B.1.e. A detailed description of any proposed pilot, laboratory and bench scale studies (pilot or bench scale studies already conducted by the Permittee may be incorporated into the CMS);

V.B.1.f. A proposal for corrective measure(s) that shall satisfy corrective measure objectives, attain proposed media cleanup standards, control the sources of releases, and comply with applicable standards for the management of wastes; and

V.B.1.g. A Public Involvement Plan.

**V.C. CORRECTIVE MEASURE(S) IMPLEMENTATION**

V.C.1. Within ninety (90) days of written approval of the CMS by the Director, the Permittee shall submit a Corrective Measure Implementation Plan (CMI). The CMI Plan shall be submitted to the Director for written approval. The CMI Plan shall describe in detail how the approved corrective measure(s) for contaminated groundwater will be implemented. The CMI Plan shall include:

V.C.1.a. An introduction describing the overall purpose of the CMI Plan;

V.C.1.b. A summary/review of the approved corrective measure(s);

V.C.1.c. Design plans and specifications for the approved corrective measure(s);

V.C.1.d. A Construction Work Plan with construction quality assurance objectives;

V.C.1.e. An Operation and Maintenance Plan for the corrective measure(s);

V.C.1.f. A Groundwater Monitoring Plan to demonstrate the effectiveness of the corrective action program;

V.C.1.g. Corrective Measure(s) Completion Criteria to determine when corrective measure(s) have achieved the cleanup objectives;

V.C.1.h. Data management and documentation procedures;

V.C.1.i. Waste management practices;

V.C.1.j. An account of the permits required for the corrective measure(s);

V.C.1.k. A Public Involvement Plan; and

V.C.1.l. A schedule for the implementation of corrective measures.

V.C.2. Within thirty (30) days of approval of the CMI Plan by the Director, the Permittee shall implement the corrective measure(s) according to the schedule contained in the CMI Plan, and the Permittee shall update the Post-Closure Cost Estimate of Condition III.D. to account for any and all costs associated with the corrective measure(s) project.

**V.D. CORRECTIVE MEASURE(S) IMPLEMENTATION REPORT**

V.D.1. Within ninety (90) days of completing construction of the corrective measure(s), the Permittee shall submit for the Director’s approval in writing a Corrective Measure Implementation Report. In the report, the Permittee shall certify, in accordance with R315-270-11(b), that the project was built according to the design plans and specifications, and that the corrective measure(s) are performing adequately. The report shall also include, at a minimum, the following elements:

V.D.1.a. A summary on the construction of the corrective measure(s), including any deviation or modification to the design plans and specifications;

V.D.1.b. Construction quality assurance documentation; and

V.D.1.c. As built drawings or photographs.

**V.E. OPERATION AND ASSESSMENT OF THE GROUNDWATER CORRECTIVE MEASURE(S)**

V.E.1. The Permittee shall conduct corrective measure(s) as described in the approved CMI Plan.

V.E.2. The Permittee shall recalibrate the groundwater flow and solute transport model annually. The results of the model recalibration and a summary analysis of the results shall be prepared by the Permittee and submitted as outlined in IV.E.2. If new groundwater surface or contaminant data does not show any discernable differences from the previous groundwater model calibration, and if the previous groundwater model calibration was deemed satisfactory by the Director, the Permittee may petition the Director to postpone the groundwater model recalibration for one year (IV.E.3.).

V.E.3. The Permittee shall provide a summary on the effectiveness of the corrective action program in each annual report as required by Condition IV.E.2.

V.E.4. If the Director determines that the Corrective Measure(s) Completion Criteria are not being attained, the Permittee shall modify the permit to install additional corrective measure(s) designed to achieve these cleanup goals. The modification request shall be submitted within ninety (90) days of the Director’s determination.

V.E.5. If the Permittee discovers that the corrective measure(s) are not operating as intended, or that operation of the corrective measures are adversely affecting the quality of the groundwater down-gradient, he shall notify the Director within seven days.

**V.F. DURATION OF CORRECTIVE ACTION PROGRAM**

V.F.1. The Permittee shall prepare a Corrective Measure(s) Completion Report when the Permittee believes that the Corrective Measure(s) Completion Criteria have been attained. The purpose of the Corrective Measure(s) Completion Report is to fully document how the Corrective Measure(s) Completion Criteria have been met and to justify why the corrective measure(s) and/or groundwater monitoring may cease.

V.F.2. The Permittee shall continue the corrective measures and groundwater monitoring until the Permittee receives written notification from the Director approving the request to cease corrective measure(s) and/or groundwater monitoring as proposed in the Corrective Measure(s) Completion Report.

**V.G. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION**

V.G.1. The Permittee shall be financially responsible for the development and implementation of the corrective action program.