



CH2MHILL

CH2M HILL, Inc.
2020 S.W. Fourth Avenue
Suite 300
Portland, OR
97201
Tel 503.235.5000

December 6, 2005

Ms. Jill Kiernan
Oregon Department of Environmental Quality
2020 S.W. Fourth Avenue
Portland, OR 97201

Subject: Updated Rhodia Suttle Road Operation, Maintenance, and Monitoring Plan

Dear Ms. Kiernan:

Thank you for your letter dated November 7, 2005, regarding the Rhodia Suttle Road Operation, Maintenance, and Monitoring Plan (OMMP). As requested, we have updated the OMMP scheduling table (Table 1 of the Appendix, page 3) for consistency with the Sediment Cap Project Closure Report. The update consists of inserting a second conditional inspection requirement to be implemented during Monitoring Phase 3.

A replacement version of the OMMP reflecting this change is enclosed.

Please contact me at 503-776-4322 with any further questions you may have regarding DEQ's approval of this document.

Sincerely,

CH2M HILL

Dave Dailer
Senior Project Manager

C: Dan Bersanti/DEQ
Bruce Gilles/DEQ
Darrel Hodge/Rhodia
John Childs/CH2M HILL

OMMP

Rhodia Suttle Road: Operation, Maintenance, and Monitoring Plan

Prepared for
Rhodia Inc.

December 2005

Prepared by
CH2MHILL

Contents

Section	Page
Purpose	1
Project Location.....	1
Records Management Plan	1
Reporting Procedures to Address Emergencies.....	1
Upland OMMP Requirements	2
Upland Inspection Procedures and Schedule	2
Upland Procedures for Subsurface Maintenance Activities in Institutional Control Areas (Areas 3, 4, 5, 7, and 9).....	4
Sediment Cap OMMP Requirements.....	8
Sediment Cap Inspection Procedures and Schedule.....	8
Sediment Cap Schedule.....	8
References	9
Appendix	
Yearly Inspection Record and Sediment Cap Checklist	
Tables	
1 Summary of DEQ Notification, Protective Measures, and Material-Handling Procedures for Institutional Control Areas.....	4
2 Proposed Sediment Cap Monitoring Program Schedule.....	9
Figure	
1 Map of Rhodia Suttle Road Facility Northern Area.....	3

Purpose

The purpose of this Operation, Maintenance, and Monitoring Plan (OMMP) is to summarize and to document the ongoing requirements of previous remedial actions performed at the Rhodia Suttle Road Facility. These completed remedial actions have fully complied with the Mutual Agreement between Rhodia and the Oregon Department of Environmental Quality (DEQ), dated May 18, 2000.

This OMMP describes the requirements for two remedial action areas:

- Upland OMMP Requirements
- Sediment Cap OMMP Requirements

The upland soil and groundwater remedial actions are further described in the *Soil Remedial Action Project Closeout Report* (CH2M HILL, 2002); the sediment cap design and construction is further described in the *Rhodia Suttle Road Sediment Capping Project Design Report* (CH2M HILL, 2003) and the *Rhodia Suttle Road Sediment Cap Project Closure Report* (CH2M HILL, 2005).

Project Location

The Rhodia Inc. alum facility is located at 4429 North Suttle Road, in Portland, Oregon. The sediment cap site is located along the southern shore of the Oregon Slough (North Portland Harbor) just north of the alum facility in the northeast quarter of Section 32, Township 2 North, Range 1 East, at approximate river mile 2.5 of the Oregon Slough, which corresponds to approximate river mile 105.1 of the Columbia River. The sediment cap site is north of Marine Drive, along the bank of the Oregon Slough.

The ordinary high water (OHW) elevation at the site is 15.6 feet Columbia River Datum, as stated by the Portland District of the U.S. Army Corps of Engineers (USACE) in *Channel Status Columbia River*. All project elevations are shown in City of Portland (COP) datum. The OHW is 16.7 feet COP datum.

Records Management Plan

All inspection reports, memoranda, photographs, and other information generated by the Rhodia staff as part of the facility subsurface maintenance and inspection requirements will be kept on file at the plant site. The information will be kept in a locked file that is maintained by Rhodia administrative personnel. All documents related to the project will be kept in the same file folder/cabinet. All files will be maintained for a period of at least 5 years.

Reporting Procedures to Address Emergencies

Site emergency procedures are summarized in the site *Health, Safety, and Environmental Program* guidebook. Rhodia currently has a 400-page guidebook containing the procedures to be followed by Rhodia personnel to comply with state and federal regulations and to achieve Rhodia performance standards. This guidebook is continually updated to reflect new regulations and procedures, and is audited yearly by Rhodia Corporate Environmental

Health and Safety staff. The site *Health, Safety, and Environment Program* guidebook will be maintained by the Rhodia Operations Manager and is available for inspection at the site.

Upland OMMP Requirements

Upland Inspection Procedures and Schedule

Soil, Asphalt, and Concrete Areas

Inspections will be conducted in early spring after winter conditions have subsided. The inspections will likely be conducted in April or May. Rhodia plant maintenance personnel will inspect annually the Areas 3 and 4 soil and asphalt cap, the Area 7 concrete flooring, and the Areas 5 and 9 asphalt caps (see figure). The inspections will be conducted in early spring, starting in 2002. The appendix includes a copy of the inspection form to be used by Rhodia plant personnel during the inspection and for record keeping. The form will be used to document inspections and record areas of concern. Photographs of the areas of concern will be taken to provide visual documentation of problems and associated repairs.

The inspection areas shall be inspected as outlined below.

Inspection Area 7

- The inspector first will walk through Area 7, which is an active bag loading area. The purpose of the inspection is to ensure that any cracks in the concrete floor are filled, that new cracks have not appeared, and that the floor itself provides adequate coverage of underlying soils. The concrete flooring will be inspected for cracks that could allow exposure to the underlying soils. The inspector will start at the south end of the building, and will slowly walk north, moving in an east to west pattern, so that the entire floor is inspected. Any cracks or areas of subsidence will be noted, a paint mark placed near the area, and a photograph taken. Notes will be recorded on the inspection form.

Inspection Area 4

- The inspector will start on the southern edge of Area 4, and will walk in an east-west pattern, crossing the entire area on parallel paths approximately 15 feet apart. The purpose of the inspection is to observe the entire area and to identify cracks, subsidence, or exposed areas that require corrective action.
- Cracks and areas of subsidence observed in Area 4 will be recorded, a paint mark placed near the area, and a photograph taken. The notes will be recorded and the location indicated on the diagram included on the inspection form.

Inspection Areas 3, 5, and 9

- Area 3, the western portion of Area 5 (rail area), and Area 9 should be similarly inspected as above.

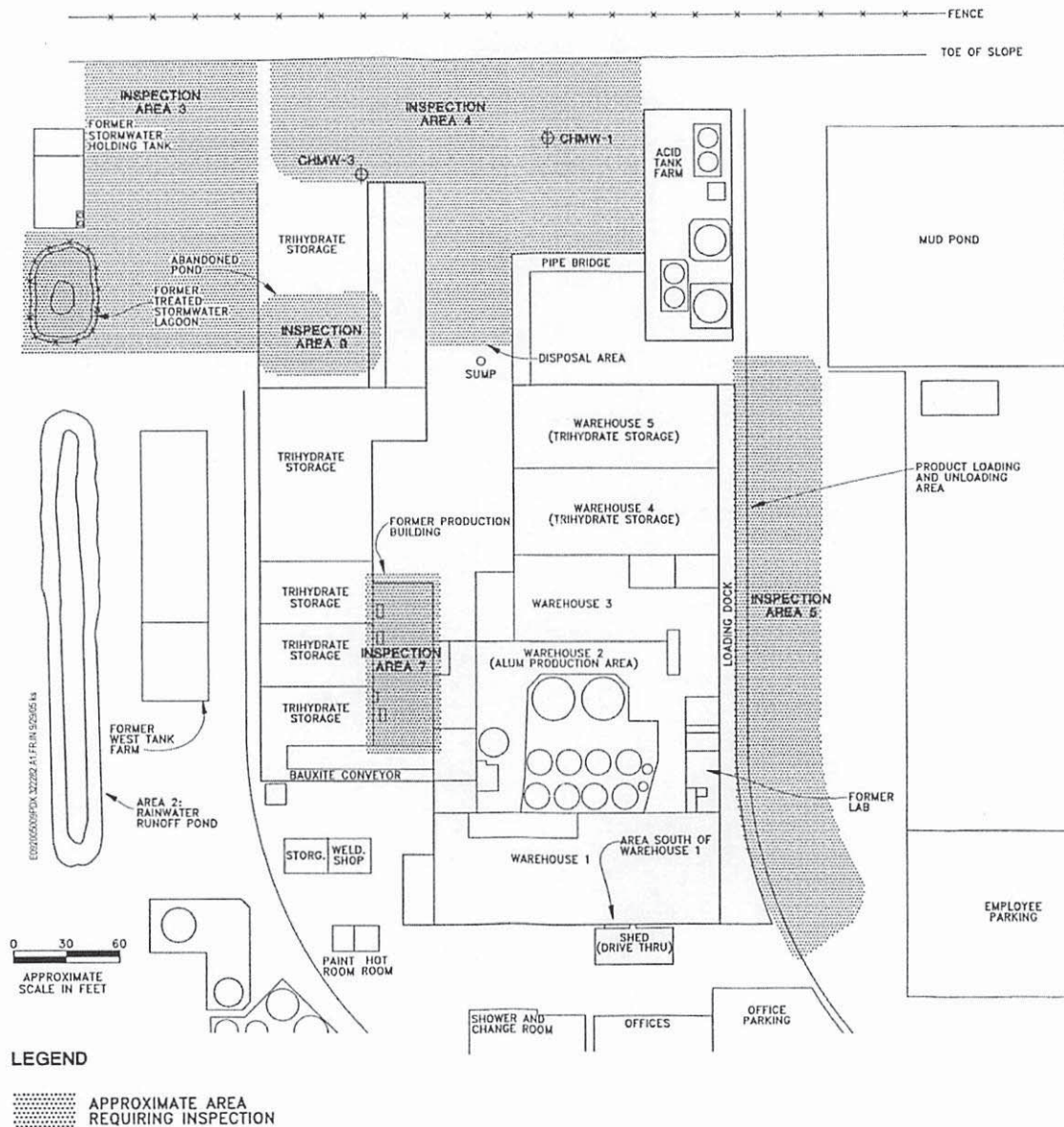


FIGURE 1
Map of Rhodia Suttle Road Facility Northern Area
 RHODIA SUTTLE ROAD FACILITY
 PORTLAND, OREGON

CH2MHILL

The following actions will be conducted during the inspections:

- The selected inspector will obtain the required inspection form (see the appendix). The inspector also will obtain the inspection report from the previous year to verify that actions were taken, a camera to provide visual documentation of problem areas, and marking paint to highlight areas of concern for later action.

- The inspector will wear personal protective equipment as required by the Rhodia safety program for each area.
- After completing the inspection, inspection forms will be completed and returned to the operations manager for review and development of an action item list.
- The operations manager will sign the completed form and will maintain a copy of the form at the plant site for at least 5 years.
- Action items on the list should be completed within 90 days of filing the form with DEQ. Action items could include filling of cracks, placement of additional material, and replacement of asphalt or concrete.
- Subsequent to 2004, completed inspection forms will be made available onsite for future DEQ inspections.

Phytoremediation Area

Inspection of the phytoremediation area was performed annually starting in 2000 for the 2 years following planting. Monitoring of the phytoremediation area is complete and is no longer required.

Groundwater Monitoring Areas

Monitoring and inspection of the groundwater monitoring is complete and is no longer required.

Stockpiled Soil Area

Monitoring and inspection of the stockpiled soil area is complete and is no longer required.

Upland Procedures for Subsurface Maintenance Activities in Institutional Control Areas (Areas 3, 4, 5, 7, and 9)

Table 1 summarizes proper material handling procedures and protective measures to be followed when working in different areas onsite. Table 1 also identifies DEQ notification requirements based on where the work is to be performed.

TABLE 1
Summary of DEQ Notification, Protective Measures, and Material-Handling Procedures for Institutional Control Areas
Facility Subsurface Maintenance Plan

Inspection Area	DEQ Notification Requirement	Protective Measures and Material Handling
Area 3	Notification required for subsurface work performed in Area 3.	Workers should wear gear typical of trench work and required by the facility safety program—coveralls, safety shoes, hard hats, proper gloves, and safety glasses. Soil material removed from excavation will be used for backfill and supplemented with clean fill material if needed. Soil will not be placed permanently outside Area 3 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these

TABLE 1

Summary of DEQ Notification, Protective Measures, and Material-Handling Procedures for Institutional Control Areas
Facility Subsurface Maintenance Plan

Inspection Area	DEQ Notification Requirement	Protective Measures and Material Handling
		criteria. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts.
Area 4— Utility Corridor	No DEQ notification required for work performed in utility corridor.	Workers should wear gear typical of trench work and required by the facility safety program—coveralls, safety shoes, hard hats, proper gloves, and safety glasses. If non-native material suspected of containing COPCs is encountered, personnel with appropriate OSHA health and safety certification and medical surveillance, using appropriate protective equipment, shall remove the material. Material will be placed in a drum and handled according to RCRA requirements. Soil will not be placed permanently outside Area 4 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these criteria. Soil material removed from excavation will be used for backfill and supplemented with clean fill material if needed. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts.
Area 4— Other Areas	<u>Work within top 4 feet bgs:</u> Work performed in the top 4 feet bgs will require no notification to DEQ. <u>Work below 4 feet bgs:</u> If work is to be performed at a depth greater than 4 feet bgs, DEQ will be notified before work commences.	Workers should wear gear typical of trench work and required by the facility safety program—coveralls, safety shoes, hard hats, proper gloves, and safety glasses. Soil material removed from excavation will be used for backfill and supplemented with clean fill material if needed. Soil will not be placed permanently outside Area 4 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these criteria. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts. Any work performed below 4 feet bgs will be conducted under appropriate OSHA health and safety certification and medical surveillance, using the appropriate protective equipment. Material suspected of containing COPCs above hot-spot criteria will be sampled, placed in a drum, and handled according to RCRA requirements. Visual evidence (for example, chemical residues, staining) or olfactory evidence (for example, pesticide odors) will be used to determine whether COPCs are present at levels exceeding hot-spot criteria. Soil material removed from excavation will be used for backfill and supplemented with clean fill material if needed. Soil will be characterized for COPCs if placed outside Area 4.

TABLE 1

Summary of DEQ Notification, Protective Measures, and Material-Handling Procedures for Institutional Control Areas
Facility Subsurface Maintenance Plan

Inspection Area	DEQ Notification Requirement	Protective Measures and Material Handling
		Soil will not be placed permanently outside Area 4 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these criteria. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts. Soil excavated from depths deeper than 4 feet will be segregated from shallow soils. Soils originating from depths deeper than 4 feet will be replaced into the excavation before placement of soil originating from depths shallower than 4 feet.
Area 5	<u>Between loading dock and railroad track, and soil under railroad track ballast:</u> DEQ notification is required. <u>East of railroad track:</u> Work will require no notification to DEQ.	Any work performed below the surface will be conducted under appropriate OSHA health and safety certification and medical surveillance using the appropriate protective equipment. Removed soil will be handled as material exceeding hot-spot concentrations. Visual evidence (for example, chemical residues, staining) or olfactory evidence (for example, pesticide odors) will be used to determine whether COPCs are present at levels exceeding hot-spot criteria. Material suspected of containing COPCs above hot-spot criteria will be sampled, placed in a drum, and handled according to RCRA requirements. Soil will not be placed permanently outside Area 5 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these criteria. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts. Workers should wear gear typical of trench work and required by the facility safety program—coveralls, safety shoes, hard hats, proper gloves, and safety glasses. Soil will be handled as clean fill. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts.
Area 7	DEQ must be notified prior to any work involving removal or replacement of floor. Plan must include investigation of soil under floor.	Workers removing floor and performing investigation shall be in compliance with the plan submitted to DEQ. Plan will outline appropriate health and safety, excavation, and backfill measures. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts.
Area 9	<u>Work within top 4 feet bgs:</u> Work performed in the top 4 feet bgs will require no notification to DEQ.	Workers should wear gear typical of trench work and required by facility safety program—coveralls, safety shoes, hard hats, proper gloves, and safety glasses. If non-native material suspected of containing COPCs is encountered, personnel with appropriate OSHA health and safety certification and medical

TABLE 1

Summary of DEQ Notification, Protective Measures, and Material-Handling Procedures for Institutional Control Areas
Facility Subsurface Maintenance Plan

Inspection Area	DEQ Notification Requirement	Protective Measures and Material Handling
		surveillance, using appropriate protective equipment, shall remove the material. Soil will not be placed permanently outside Area 9 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these criteria. Material suspected of containing COPCs above hot-spot criteria will be sampled, placed in a drum, and handled according to RCRA requirements. Visual evidence (for example, chemical residues, staining) or olfactory evidence (for example, pesticide odors) will be used to determine whether COPCs are present at levels exceeding hot-spot criteria. Soil material removed from excavation will be used for backfill and supplemented with clean fill material if needed. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts.
	<u>Work below 4 feet bgs:</u> If work is to be performed below 4 feet bgs, DEQ will be notified before work commences.	Any work performed below 4 feet bgs will be conducted under appropriate OSHA health and safety certification and medical surveillance, using appropriate protective equipment. Material suspected of containing COPCs above hot-spot criteria will be sampled, placed in a drum, and handled according to RCRA requirements. Visual evidence (for example, chemical residues, staining) or olfactory evidence (for example, pesticide odors) will be used to determine whether COPCs are present at levels exceeding hot-spot criteria. Soil material removed from excavation will be used for backfill and supplemented with clean fill material if needed. Soil will not be placed permanently outside Area 9 unless it is characterized for COPCs and the COPC concentrations are below the 1×10^{-6} risk-based concentrations presented in the ROD. DEQ approval must be obtained for any exception to these criteria. Potential airborne hazards should be evaluated prior to performing work. If warranted, employ air monitoring and dust suppression efforts. Soil excavated from depths deeper than 4 feet will be segregated from shallow soils. Soil originating from depths deeper than 4 feet will be replaced into the excavation before placement of soil originating from depths shallower than 4 feet.

Notes:

bgs = below ground surface

COPC = constituent of potential concern

DEQ = Oregon Department of Environmental Quality

OSHA = Occupational Safety and Health Administration

RCRA = Resource Conservation and Recovery Act

ROD = Record of Decision

Sediment Cap OMMP Requirements

Sediment Cap Inspection Procedures and Schedule

The post-construction monitoring program for the Sediment Cap will consist of regularly scheduled monitoring events, as well as monitoring after an extreme storm event (that is, after a 100-year flood event). Monitoring will consist of performing a survey of the cap area, along with a videotaped inspection of the cap. Ideally, the inspection will be performed during summer months when the cap area is exposed above water. If the cap is submerged, a diver will perform the videotaped inspection for the portions of the cap that are underwater.

The survey will be compared to the post-construction record survey and previous inspection surveys to determine if the Sediment Cap is settling, if areas of erosion are developing, or if river sediment is being deposited over the cap area. The videotaped inspection will be reviewed to look for signs of erosion, movement, or sediment deposition.

If erosion of the cap is occurring, the cause of the erosion will be evaluated and alternatives for repair of the cap assessed. Required maintenance of the cap will be performed during the next in-water work period after required permits for the repairs are obtained.

In addition, weed control will be evaluated during monitoring events and controlled as described in Subsection 13.5 of the State of Oregon Department of State Lands (DSL) *Submerged and Submersible Land Lease* (DSL, 2004). The Lease agreement requires control of:

noxious weeds including aquatic weeds, plant pests and diseases as directed by the local county weed control district, the Oregon Department of Agriculture, or any other governmental authority which may now or in the future have authority with regard to prevention or control, or both, of noxious weeds, plant pests or diseases or as may be authorized or directed by the State.

Inspection reports will be prepared and submitted to DEQ within 90 days after completion of the inspection. The inspection reports should include copies of the checklist in *Rhodia Suttle Road Sediment Cap Project Closure Report, Appendix F, July 2005* (CH2M HILL, 2005), photos, videotapes, and description and documentation of any repairs completed since last inspection. A copy of the checklist is included in this OMMP as an appendix. Also, include identification of problems/ areas requiring repair, description of how repairs will be done, and schedule for repairs.

Sediment Cap Schedule

The proposed schedule for Sediment Cap monitoring is presented in Table 2.

TABLE 2
Proposed Sediment Cap Monitoring Program Schedule

Monitoring Phase	Frequency	Inspection Required
1	Biannual inspections for the first 5 years after cap construction (that is, years 1, 3, and 5)	Survey and visual (videotaped)
2	One additional inspection at year 10	Survey and visual (videotaped)
3 (Conditional)	The need for and scheduling of future inspections beyond year 10 will be determined in consultation with the Oregon Department of Environmental Quality	To be determined
3 (Conditional)	One additional time every 5 years if erosion of the cap is observed or if repairs to the cap have occurred	Visual (videotaped) only
Storm-Induced	One time after each 100-year storm event until No Further Action determination is made	Visual (videotaped) only

References

- CH2M HILL. 2002. *Rhodia Suttle Road Facility Soil Remedial Action Project Closeout Report*. March 2002.
- CH2M HILL. 2003. *Rhodia Suttle Road Sediment Capping Project Design Report*. June 2003.
- CH2M HILL. 2005. *Rhodia Suttle Road Sediment Cap Project Closure Report*. September 2005.
- Portland District of the U.S. Army Corps of Engineers (USACE). *Channel Status Columbia River*.
- State of Oregon Department of State Lands (DSL). 2004. *Submerged and Submersible Land Lease*. November 2004.

APPENDIX

Yearly Inspection Record and Sediment Cap Checklist

Rhodia Suttle Road Plant Yearly Controlled Area Inspection Record

Inspection Year: _____

Name of Inspector: _____ Date of Inspection: _____

Report Reviewed by: _____ Date of Review: _____
Operations Manager

Directions for Inspection: The purpose of the inspection is to determine that asphalt and concrete covers over the northern portion of the property and the soda-ash loading building are intact, and that underlying soil is covered. See the site *Health, Safety, and Environmental Program* notebook for details on the inspection and procedures.

Items Inspected or Noted:

[illegible]

Rhodia Sediment Cap Inspection Checklist

A. Condition of Cap Surface

Exposed gravel or geotextile Y____ N____

If yes, record observations.

Erosion Y____ N____

If yes, note location and depth.

Sedimentation Y____ N____

If yes, note location and depth.

Weeds or native plants Y____ N____

If weeds, note location and type (for instance, blackberry).

Debris on cap Y____ N____

If yes, was it removed? Y____ N____

Note if barrels, docks, timber, etc., are deposited on top of cap or adjacent to cap.

Note condition of rock aprons.

B. Condition of Marker Buoys

Are all three buoys intact and floating? Y____ N____

If no, describe if buoy is missing or grounded.

Is the surface of the buoys intact, with no rips or tears? Y____ N____

Have the buoys moved since previous year? Y____ N____

If yes, note location.

C. Water Level at Time of Inspection

Note percentage of cap area covered by water.

Note water level relative to cap.

D. Photographs and Videotape

Take minimum of three photographs, one from east end, one from west end, one from Marine Drive. If dry, videotape surface of cap by walking from one end of cap to the other. If cap is submerged, surface should be videotaped by diver in a regular pattern.

Take additional photographs of any areas requiring repair or reevaluation in future inspections.

Record areas requiring follow-up for repairs or reevaluation in future inspections.

E. Survey

At schedule shown and for events shown in Closure Report.

TABLE 1
Proposed Sediment Cap Monitoring Program Schedule

Monitoring Phase	Frequency	Inspection Required
1	Biannual inspections for the first 5 years after cap construction (that is, years 1, 3, and 5)	Survey and visual (videotaped)
2	One additional inspection at year 10	Survey and visual (videotaped)
3 (Conditional)	The need for and scheduling of future inspections beyond year 10 will be determined in consultation with the Oregon Department of Environmental Quality	To be determined
3 (Conditional)	One additional time every 5 years if erosion of the cap is observed or if repairs to the cap have occurred	Visual (videotaped) only
Storm-Induced	One time after each 100-year storm event until No Further Action determination is made	Visual (videotaped) only

F. Additional Observations

Sedimentation or erosion adjacent to cap area.

G. Signage

Inspect and maintain signage per Section 5.2.2 of the DSL *Submerged and Submersible Land Lease*. Record areas where signage maintenance is needed. Section 5.2.2 states:

Upon completion of construction of the Sediment Cap, the Leasehold shall be open to public entry for recreational and other non-proprietary use, except that that portion of the Leasehold on which the Sediment Cap is installed shall remain closed to all anchoring, all grounding, and to all vessels that are equipped with a propeller or motor of any kind. State and Lessee shall cooperate with each other and responsible agencies to ensure that adequate signage is posted in and around the Leasehold area and that other relevant public notices are published (e.g., map notations, etc.) to effectuate these purposes and restrictions. Lessee shall be responsible for installing and maintaining, at Lessee's expense all signage not installed or maintained by the Marine Board or US Coast Guard.

H. Weed Control

Note that weed control is sufficient per Section 13.5 of the DSL *Submerged and Submersible Land Lease*. Record areas where weed control is needed. Section 13.5 states:

Lessee shall control noxious weeds including aquatic weeds, plant pests and diseases within the Leasehold as directed by the local county weed control district, the Oregon Department of Agriculture or any other governmental authority which may now or in the future have authority with regard to the prevention or control, or both, of noxious weeds, plant pests or diseases, or as may be authorized or directed by the State. Such actions shall not be deemed a violation of Section 5.3.4.