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## Environmental Restoration Disposal Facility

*Waste Disposal Operations*



# Equipment Maintenance Plan

*Work Performed for  
Bechtel Hanford Inc.  
Under Subcontract  
0600X-SC-G0006*



**Waste Management  
Federal Services, Inc.**



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## **1.0 Purpose and Scope**

### **1.1 Purpose**

The purpose of the Equipment Maintenance Plan is to identify inspections and planned maintenance for the Environmental Restoration Disposal Facility (ERDF) system and equipment.

### **1.2 Scope**

This plan applies to all equipment and systems within ERDF, including both Waste Management Federal Services, Inc. (WMFS) and government furnished equipment. The activities identified in the plan address both inspections/programs required to comply with regulatory requirements and periodic maintenance for equipment/facility system operability.

The ERDF has some systems and equipment that must be maintained and inspected to meet regulatory requirements. Applicable inspection requirements are contained in 40 CFR 264.15, 195 and 303. In cases where the regulations apply, the activity and frequency will be implemented according to the applicable regulations.

## **2.0 Heavy Equipment and Service Equipment**

This section describes the maintenance requirements for heavy and service equipment utilized at the ERDF. This maintenance will be performed by a subcontractor who specializes in such maintenance. In-cell equipment will be serviced in the cell and will not be removed prior to performing maintenance. The subcontractor will be trained to perform maintenance within contaminated work zones. The recommended maintenance and frequencies on the equipment are as follows:

### **2.1 Bulldozer, Compactor, Fork Lift, In-cell Water Truck, and Front End Loader**

- Change engine oil and filter every 250 hours of operation.
- Change transmission fluid and filter every 500 hours of operation.
- Change hydraulic fluid and filter every 500 hours of operation.
- Change primary fuel filter every 2000 hours of operation.
- Change final fuel filter every 500 hours of operation.
- Change primary air filter every 2000 hours of operation.
- Change secondary air filter every 1000 hours of operation.
- Rubber tires will be inspected monthly for correct air pressure.

## **2.2 Shuttle and Service Truck, Clean Water Truck and Dust Control Equipment**

- Change engine oil and filter every 3 month or 3000 miles.
- Change transmission fluid and filter every 12 months or 15,000 miles of operation.
- Change fuel filter every 12 months or 15,000 miles of operation.
- Change air filter every 12 months or 15,000 miles of operation.
- Rubber tires will be inspected monthly for correct air pressure.

## **3.0 Site Support Systems**

This section describes the maintenance requirements for ERDF Site support systems. The systems and maintenance requirements are listed below.

### **3.1 Fences and Gates**

Fences and gates will be walked down on a monthly basis to check for holes or breaks. Gates will be lubricated to ensure proper operability. This activity will be completed by the existing ERDF site workforce.

### **3.2 Sanitary Sewage System**

The sanitary sewage system will be maintained per the requirements outlined in "Operations and Maintenance Manual" (VI-96-0014). The requirements of the manual are outlines below:

- 3.2.1 The solids level in each of the two chambers of the septic tank will be measured annually. Pumping of the tank will occur if the depth of the sludge is greater than 12 inches above the bottom of the septic tank.
- 3.2.2 The scum blanket in each of the two chambers of the septic tank will be measured annually. Pumping of the tank will occur if the thickness of the scum blanket is greater than 3 inches above the inlet or outlet inverts.
- 3.2.3 The effluent filter will be inspected every 6 months for evidence of clogging. The effluent filter will be cleaned at least annually.
- 3.2.4 The distribution box will be inspected every 6 months for evidence of clogging. The distribution box will be cleaned at least annually.
- 3.3.5 The drainfield will be inspected for ponding, odors, and variation of color and growth of vegetation every two months. Monitor ports will be inspected every 6 months for uneven distribution levels of effluent in the drainfield.

The inspection activity will be completed by the existing ERDF WMFS exempt, non-exempt and building trades staff. If necessary, the pumping of the tank will be performed by a subcontractor who specializes in such an activity.

### **3.3 Raw and Potable Water System**

The raw and potable water system will be inspected on an annual basis. The system will be inspected for leaking valves and other obvious problems. This activity will be completed by the existing site workforce.

Repairs will be conducted on an as needed basis. Repairs will be performed by subcontractor who specializes in such an activity.

### **3.4 Electrical and Communications Systems**

The electrical and communications system will be inspected every two years. Substation switchgear and circuit breakers will be cleaned and functionally checked. Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

### **3.5 Site Lighting**

The site lighting system will be inspected on a monthly basis. The system will be inspected for nonfunctioning lights. The inspection activity will be completed by the existing WMFS exempt and non-exempt staff. Repairs will be conducted on an as needed basis. The repairs will be performed by a subcontractor who specializes in such an activity.

### **3.6 Weed Control**

During the Summer of 1996, the dust control agent called "Soil Sement" will be applied to control ambient dust during windy periods and then in the fall a wheatgrass mixture will be seeded on the perimeter sites.

To help reduce the need for weed control it should be noted that the key to reducing Russian thistle is by preventing establishment of this species. ERDF waste disposal operations will need to control Russian thistle in both the operational and perimeter areas, including the exterior structural side slopes that will have a rock armor. Control measures will include cultural, and mechanical weed removal along with chemical herbicide applications. After wheatgrass has been planted, there will be an occasional need for a spot spray of selective herbicide in the first growing season of 1996/1997. If needed, a single pre-emergent or selective chemical application in the following growing seasons will reduce weed pressure until the seeded wheatgrass and volunteer cheatgrass is adequately established. A selective herbicide application in a newly established wheatgrass stand should consist of a low label rate of a selective product (2,4-D and dicamba salt) such as "Weedmaster" (1 quart/acre active ingredient). On established stands of wheatgrass after

the first full growing season a pre-emergent application should entail 0.5 ounce/acre of (Metsulfuron-methyl) such as "Escort" and 3 quart of "Weedmaster."

In no case should the should a "sterilant" such as "Tordon" be used to control vegetation growth thereby inhibiting closure restoration activities after the first cell is completed. All pesticide application records should be submitted to BHI and sent to CJ Kemp of the BHI Natural Resources and Risk Assessment Group (NR&RA) to be placed in the project files. In addition, the Washington State Department of Agriculture (WSDA) requires that all pesticide application records be submitted to the WSDA Pesticide Management Division. Any use of herbicide types and applications should be reviewed with BHI NR&RA to make sure the choice of product is appropriate and application period will provide optimal control. This activity will be performed by a subcontractor who specializes in such an activity.

## **4.0 Roads and Grounds**

### **4.1 Ditches, Swales for Run-on/Run-off Control**

The ditches and swales will be inspected on a weekly basis and after storms. The system will be inspected for erosion. Erosion that allows contaminated water to "run-off" the site and erosion that allows clean water to "run-on" the landfill cells will be corrected. Repairs will be conducted on an as needed basis. This inspection activity will be completed by the WMFS exempt and non-exempt staff. If necessary, repairs will be completed by the existing ERDF waste disposal site workforce (Labors and Operating Engineers)

### **4.2 Site Roads, Ramps, and Loading Slab**

The site roads, ramps and loading slab will be inspected on a monthly basis and after storms. The system will be inspected for erosion and rutting. Repairs will be conducted on an as needed basis. This inspection activity will be completed by the WMFS exempt staff. If necessary, repairs will be completed by the existing ERDF waste disposal site workforce (Labors and Operating Engineers)

### **4.3 Trench Slopes**

Trench slopes will be inspected annually or following major precipitation of snow melt events. Rills or other erosion features will be repaired on an as needed basis.

## **5.0 Leachate Recovery System**

### **5.1 Landfill Sump Pumps**

Each of the three leachate removal pumps located in each cell's sumps will be tested for operability on a monthly basis. The test will be performed by switching each of the pump control switches to the manual start position and watching for an indication of flow on the flow totalizer readout. This activity will be completed by the existing ERDF site workforce.

Repairs will be conducted on an as needed basis. Pumps will be maintained per the manufactures recommendations. The repairs will be performed by a subcontractor who specializes in such an activity.

### **5.2 Flowmeter and Manifold System**

The flow meter and manifold system will be inspected on a daily basis for corrosion and leakage. If a leak has occurred to the environment, the contingency plan as defined in the ERDF Health and Safety Plan will be invoked.

During the pump operability test in item 5.1, the flow meter and manifold system will also be tested. This activity will be completed by the existing ERDF site workforce.

Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

### **5.3 Sump Pump Control Instrumentation**

The control instrumentation that start and stop the leachate removal pumps will be functionally tested on an annual basis. The test will consist of sending a signal to the pump controllers. The signal will be proportional to the sump levels where the pumps are set to activate.

Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

### **5.4 Crest Pad Control Building and Electrical Switchgear**

The control building and electrical switchgear will be inspected every two years. Switchgear and circuit breakers will be cleaned and functionally checked. Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

## **6.0 Leachate Load-Out Station**

### **6.1 Leachate and Washwater Tanks**

The storage tanks will be inspected on a daily basis. The system will be inspected for defects that could cause leakage. This inspection activity will be completed by the WMFS Exempt Staff. If a leak has occurred to the environment, the contingency plan will be invoked.

Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

### **6.2 Leak Detection System Both Leachate and Washwater Transfer Lines**

The leak detection panel readouts will be monitored on a daily basis. The system will be monitored for alarms that will indicate potential breaks in the primary waste transfer system. This activity will be completed by the existing WMFS exempt and non-exempt staff.

The leak detection system will be functionally checked on an annual basis to verify operability. This will include a functional test of each flood alarm and leak detectors. This activity will be completed by the existing ERDF site workforce.

### **6.3 Load-out Pumps**

If the loadout pumps are not operated for a period of more than 3 months. The pumps will be tested for operability. This inspection activity will be completed by a combination of the WMFS exempt staff and labor staff.

Pumps will be maintained per the manufactures recommendations. Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

### **6.4 Lift Pumps**

The lift pumps will be tested for operability. This inspection activity will be completed by a combination of the WMFS exempt staff and labor staff.

Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

## **6.5 Pump Control Instrumentation**

The pump control instrumentation will be functionally tested on an annual basis. The system will be tested for operability. This inspection activity will be completed by a combination of the WMFS exempt staff and labor staff.

Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

## **6.6 Leachate Load-Out Building and Electrical Switchgear**

The leachate load-out building and electrical switchgear will be inspected every two years. Switchgear and circuit breakers will be cleaned and functionally checked. Repairs will be conducted on an as needed basis. This activity will be performed by a subcontractor who specializes in such an activity.

## **7.0 Wash Pad System**

### **7.1 Wash Pad**

The wash pad will be inspected on a weekly basis. The system will be inspected for defects that could cause leakage (i.e., cracks). This inspection activity will be completed by the WMFS exempt staff. Repairs will be conducted on an as needed basis.

### **7.2 Settling Basin**

The settling basin will be inspected every 6 months. The solids level in the basin will be measured and cleanout will occur if the level is 2 feet above the bottom of the tank. This inspection and cleanout activity will be completed by a combination of the WMFS exempt staff and labor staff.

The solids material will be dewatered or solidified using portland cement. Since the solids material is decontamination residues from CERCLA waste, the material will be disposed of in the ERDF. The material will meet the Waste Acceptance Plan and Waste Acceptance Criteria.

## **8.0 Waste Generated from Maintenance Activities**

This section will describe how the waste will be managed that is generated from maintenance activities.

## 8.1 General

If wastes generated during maintenance activities are found to be contaminated with CERCLA waste, then the waste will be disposed of in the ERDF. This waste must meet the requirements of the waste acceptance plan prior to disposal at the ERDF.

## 8.2 Contaminated Unusable Equipment

Contaminated Unusable equipment and unsalvageable parts will be disposed of in the ERDF. If decontamination is cost effective, these materials will be decontaminated and recycled as scrap.

## 8.3 Contaminated Reusable Equipment

Contaminated reusable equipment and salvageable parts will be decontaminated and stored for reuse. If these parts have to be shipped offsite for repair or core refund, a full radiological release survey must be performed.

## 8.4 Contaminated Secondary Waste

Contaminated Secondary waste (generally rags and PPE) will be disposed of in the ERDF.

## 8.5 Used Oil

Used oil will be disposed of using the following guidelines:

Used oil that meets the requirements to be sent offsite for recycling will be sent offsite. If the oil has been contaminated with CERCLA wastes, then the oil will be solidified and disposed of in the ERDF. The requirement to send oil offsite include the following:

	Specification Used Oil	Off-Specification Used Oil
Metals*	Not to exceed	Sum must not exceed
Arsenic	5 ppm	100 ppm
Cadmium	2 ppm	
Chromium	10 ppm	
Lead	100 ppm	
Ignitability	≥ 140°F	≥ 140°F
Total Hydrocarbons	< 1,000 ppm	< 1,000 ppm
PCBs	< 2 ppm	< 2ppm

\*Do TCLP and analysis for additional heavy metals if they are suspected

## 9.0 Maintenance Records

Appendix A contains the maintenance checklists and records. The Records will be placed in locked storage when completed and kept for 5 years.

## Appendix A

## Daily Maintenance Routines

System	Action	Date/Time	Pass/Fail	Inspector Name Print/Signature
Manifold Systems	Inspect for leaks and corrosion.			
Wash Water Tanks	Inspect for leaks and damage.			
Leak Detection	Monitor readouts for alarms.			
Manifold Systems	Inspect for leaks and corrosion.			
Wash Water Tanks	Inspect for leaks and damage.			
Leak Detection	Monitor readouts for alarms.			
Manifold Systems	Inspect for leaks and corrosion.			
Wash Water Tanks	Inspect for leaks and damage.			
Leak Detection	Monitor readouts for alarms.			
Manifold Systems	Inspect for leaks and corrosion.			
Wash Water Tanks	Inspect for leaks and damage.			
Leak Detection	Monitor readouts for alarms.			
Manifold Systems	Inspect for leaks and corrosion.			
Wash Water Tanks	Inspect for leaks and damage.			
Leak Detection	Monitor readouts for alarms.			

Comments: \_\_\_\_\_

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## Weekly Maintenance Routines

System	Action	Date/Time	Pass/Fail	Inspector Name Print/Signature
Week 1				
Run-on/Run-off Control	Inspect ditches and swales for erosion.			
Wash Pad	Inspect wash pad for problems that may cause leakage.			
Week 2				
Run-on/Run-off Control	Inspect ditches and swales for erosion.			
Wash Pad	Inspect wash pad for problems that may cause leakage.			
Week 3				
Run-on/Run-off Control	Inspect ditches and swales for erosion.			
Wash Pad	Inspect wash pad for problems that may cause leakage.			
Week 4				
Run-on/Run-off Control	Inspect ditches and swales for erosion.			
Wash Pad	Inspect wash pad for problems that may cause leakage.			
Week 5 (as needed)				
Run-on/Run-off Control	Inspect ditches and swales for erosion.			
Wash Pad	Inspect wash pad for problems that may cause leakage.			

Comments: \_\_\_\_\_  
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## Monthly Maintenance Routines

System	Action	Date/Time	Pass/Fail	Inspector Name Print/Signature
Fences and Gates	Check for holes and breaks, lubricate gates as needed.			
Site Lighting	Inspect for non-functional lights and bulbs.			
ERDF Roads, Ramps, and Loading Slab	Inspect for erosion and potholes.			
Landfill Sump Pumps	Perform and inspect operability test of pumps.			
Flow Meter	During the sump pump operability test, also test the flow meter.			
<b>Every Odd Month (i.e., Jan., Mar., May, etc.)</b>				
Sewage System Drainfield	Inspect for ponding, odors, variation of color, and growth of vegetation every 2 months.			

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## Quarterly Maintenance Routine

System	Action	Date/Time	Pass/Fail	Inspector Name Print/Signature
<b>1<sup>st</sup> Quarter (January)</b>				
Load-Out Pumps	Perform operability test.			
Leachate Lift Pumps	Perform operability test.			
<b>2<sup>nd</sup> Quarter (April)</b>				
Load-Out Pumps	Perform operability test.			
Leachate Lift Pumps	Perform operability test.			
<b>3<sup>rd</sup> Quarter (July)</b>				
Load-Out Pumps	Perform operability test.			
Leachate Lift Pumps	Perform operability test.			
<b>4<sup>th</sup> Quarter (October)</b>				
Load-Out Pumps	Perform operability test.			
Leachate Lift Pumps	Perform operability test.			

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## Bi-Annual Maintenance Routine

System	Action	Date/Time	Pass/Fail	Inspector Name Print/Signature
April				
Septic Tank	Inspect effluent filter for blockage, drainfield for evidence of malfunction, and levels in drainfield ports for even distribution.			
Weed Control	Inspect for weeds in unwanted areas.			
Settling Basin	Inspect solids level.			
October				
Septic Tank	Inspect effluent filter for blockage, drainfield for evidence of malfunction, and levels in drainfield ports for even distribution.			
Weed Control	Inspect for weeds in unwanted areas.			
Settling Basin	Inspect solids level.			

Comments: \_\_\_\_\_

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## Yearly Maintenance Routines

System	Action	Date/Time	Pass/Fail	Inspector Name Print/Signature
APRIL				
Septic Tank	Measure sludge levels, scum blanket and clean effluent filter.			
Leachate Sump Pump Control Instruments	Perform functional test.			
Leak Detection System	Perform functional test of each flood alarm and leak detectors to verify			
Pump Control Instrumentation	Perform functional test for operability.			

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