

# Monticello, Utah, National Priorities List Sites Federal Facility Agreement (FFA) Quarterly Report: April 1–June 30, 2011

This report summarizes project status and activities implemented April through June 2011 and provides a schedule for near-term activities at the Monticello Vicinity Properties (MVP) site and the Monticello Mill Tailings Site (MMTS) located in and near Monticello, Utah.

The MMTS and MVP were placed on the U.S. Environmental Protection Agency (EPA) National Priorities List (NPL) in 1989 and 1986, respectively. The U.S. Department of Energy (DOE) implemented remedial actions at the MVP in 1986 and at the MMTS in 1989, to conform to requirements of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act. MMTS and MVP remedial actions were completed by September 1999, except for the remediation of contaminated groundwater (Operable Unit III [OU III] of the MMTS), which is an ongoing process. The MMTS and MVP are administered as the Monticello Disposal and Processing Sites by the DOE Office of Legacy Management (LM).

## 1.0 MMTS Activities and Status

### 1.1 Repository Site

The repository site consists of the waste disposal cell and associated leachate management system, the temporary waste storage facility [TSF], and support infrastructure (drainage controls, fencing, signage, roads, etc.). As directed by the LM *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (LTSM plan), monthly and quarterly inspections of the repository site are conducted by on-site LM contractor personnel to document site conditions that may affect the integrity of the site in protecting human health and the environment.

Findings from activities this quarter included the following:

- Disposal cell leachate collection in the upper sumps (i.e., the Leachate Collection and Recovery System [LCRS]) was normal for the quarter. Leachate production has decreased from approximately 30,000 gallons per week following final waste encapsulation in 1999 to current values of about 1,000 gallons per week or less for each of the two sumps (LCRS 1 and 2; see attached graph).
- Operation of the LCRS at the leachate collection pond (Pond 4) was normal (i.e., no water was collected during the quarter; see attached graph).
- Disposal cell and Pond 4 leachate collection in the lower sumps (Leak Detection System [LDS]) remains at zero (see attached graphs).
- All disposal cell and Pond 4 leachate management equipment (pumps, pump controls, monitoring devices, and data transmission devices) are functional.
- Monthly and quarterly inspections identified no abnormalities or unacceptable conditions at the repository site (see attached Repository Area Surveillance Checklists and Monthly Pond 4 Surveillance Checklists).

- The inventory of contaminated material in the TSF remains at about 1.5 cubic yards (see attached TSF Record Book Inspection Reports). In accordance with Section 3.4 of the LTSM plan, DOE initiates transfer of material from the TSF to the LM Grand Junction Disposal Site (GJDS) in Grand Junction, Colorado, when contents of the TSF approach 75 cubic yards. The most recent transfer of material from the TSF to GJDS occurred in June 2010 (documented in the July 1–September 31, 2010, quarterly report).

## **1.2 Operable Unit I (Former Mill Site, City-Owned)**

Periodic surveillance of the former mill site is conducted to ensure compliance with land and groundwater use restrictions (i.e., institutional controls that were implemented to preserve the selected remedies for soil and groundwater on this property). Findings from activities this quarter included the following:

- No land use or groundwater use compliance issues were observed or reported by on-site LM contractor personnel.

## **1.3 Operable Unit II (Peripheral Properties, Private and City-Owned)**

Periodic surveillance of the properties surrounding the former mill site is conducted to ensure compliance with land and groundwater use restrictions (i.e., institutional controls that were implemented to preserve the selected remedies for soil and groundwater on these properties). Findings from activities this quarter included the following:

- No land use or groundwater use compliance issues were observed or reported by on-site LM contractor personnel.
- The U.S. General Services Administration, in cooperation with DOE, continues in the process to dispose parcel MP-01081-VL, located east of the repository site, to non-DOE ownership. Open-house and property tours occurred on June 21–22, 2011. Several interested parties attended and numerous telephone calls were received by on-site staff regarding the land sale. The closing date for the auction was June 23, 2011.

## **1.4 Operable Unit III (Contaminated Groundwater and Surface Water)**

### **1.4.1 Groundwater Management Area (Institutional Controls)**

Periodic surveillance of properties where residual groundwater contamination is present is conducted to ensure compliance with groundwater use restrictions (i.e., institutional controls to prevent exposure to contaminated groundwater). Findings from activities this quarter included the following:

- No groundwater use compliance issues were observed or reported by on-site LM contractor personnel.

### **1.4.2 Ex Situ Groundwater Treatment System**

Contaminated alluvial groundwater is extracted and treated on private property at a location approximately 600 feet east of the former mill site. The contaminated groundwater is treated using zero-valent iron in two ex situ treatment vessels. The effluent is then discharged to Montezuma Creek or returned to the aquifer.

Discharge allowances to Montezuma Creek were negotiated between DOE, EPA, the Utah Department of Environmental Quality (UDEQ), and the Utah Division of Water Quality (DWQ) in May 2008. These allowances are based on the Utah standard for acute iron toxicity to aquatic wildlife (1 milligram per liter [mg/L]) and the in-stream standard for pH for all water-use categories (greater than 6.5 and less than 9.0 standard units). The default perennial flow rate for the receiving surface water (Montezuma Creek) is 2 cubic feet per second as established by DWQ. The maximum allowed discharge rate of treated water to Montezuma Creek from the OU III treatment system is 10 gallons per minute (gpm). The corresponding discharge allowance for iron (total) is 45.4 mg/L.

Findings from activities this quarter included the following:

- Water samples were collected monthly during the quarter at influent and effluent locations to monitor performance of the treatment system in removing uranium from groundwater and to monitor compliance with the water quality (pH and iron) discharge allowances.
- Table 1 provides monthly results of total iron and pH for the combined effluent of the two treatment cells. Iron concentration and pH for the quarter are within the discharge allowances.
- Table 2 summarizes treatment system performance. Flow information is from the LM System Operation and Analysis at Remote Sites (SOARS) telemetry and data management system. Uranium concentrations are from inflow and outflow water samples collected monthly.
- Effluent discharge to Montezuma Creek did not exceed the allowed rate.
- Approximately 1.19 million gallons of water were treated and approximately 2.8 pounds of uranium were removed from the aquifer during the quarter as a result of groundwater treatment.
- The reactive media in each treatment cell was last replaced with fresh media on October 11 and 12, 2010. At that time, 16 tons of radiologically contaminated treatment media was transferred to GJDS directly; (it had not been stored at the TSF). The previous media exchange was March 18, 2009. Each treatment cell treated approximately 3.5 million gallons of contaminated groundwater between these two media exchanges. Each cell treated a similar volume prior to the March 2009 media exchange. Treatment of about 3 million gallons of groundwater per cell at similar concentrations of influent uranium is therefore an approximate target volume for future media exchange. At present rates of extraction and treatment, the next media exchange will occur in September or October of 2011.
- No significant maintenance items were required. The system operated at full capacity for the quarter except during April when flow was temporarily reduced for calibration of the outflow meter and during May 2011 when a wall-effect (preferential flow) was suspected leading to reduced treatment effectiveness (the suspected flow condition was remediated in July 2011; confirmatory sampling results are pending)

- Discharge to the infiltration trench was between 1 and 2 gpm during the quarter. Discharge of treated water to the infiltration trench was negotiated with the UDEQ Underground Injection Control Program in June 2005 (specific water quality criteria were not negotiated).

*Table 1. Treatment System Compliance Summary*

Treatment System Effluent to Montezuma Creek	March 2011	April 2011	May 2011	June 2011
pH <sup>a</sup>	7.15	7.26	7.22	7.12
Iron (total, micrograms per liter) <sup>b</sup>	21	20	17	12

<sup>a</sup> Discharge allowance range = 6.5–9.0 standard units

<sup>b</sup> Discharge limit = 45.4 milligrams per liter at outfall to creek

*Table 2. Treatment System Performance Summary*

Treatment Parameter	March 2011	April 2011	May 2011	June 2011
Gallons treated	399,121	293,450	489,684	413,742
Average treatment rate, gpm	8.9	6.8	11	9.6
Uranium influent, micrograms per liter	340	330	320	320
Uranium outfall, micrograms per liter	21	29	66	15
Uranium mass removed, pounds	1.06	0.74	1.04	1.05
Cumulative uranium mass removed, pounds	43.6	44.3	45.3	46.4
Cumulative volume treated, gallons	18,024,161	18,317,611	18,807,295	19,221,037

## 2.0 MVP Activities and Status

### 2.1 City Streets and Utilities, and Utah Department of Transportation (UDOT) Rights-of-Way

Findings from activities this quarter included the following:

- On-site LM contractor personnel continued to coordinate with the City of Monticello, UDOT, and utility company officials regarding radiological control at highway, street, and utility excavations.
- Significant upgrades to City and State utility infrastructure occurred during the quarter. Radiologically contaminated materials were not encountered in excavations associated with these activities.

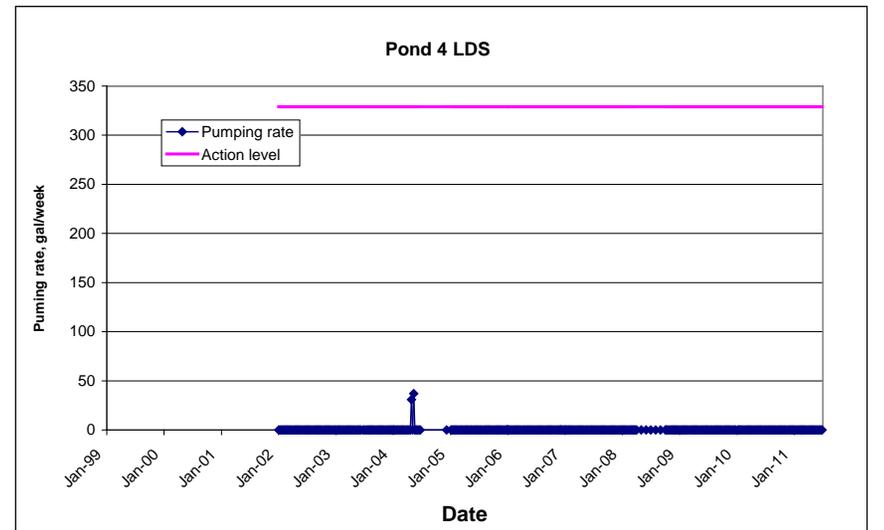
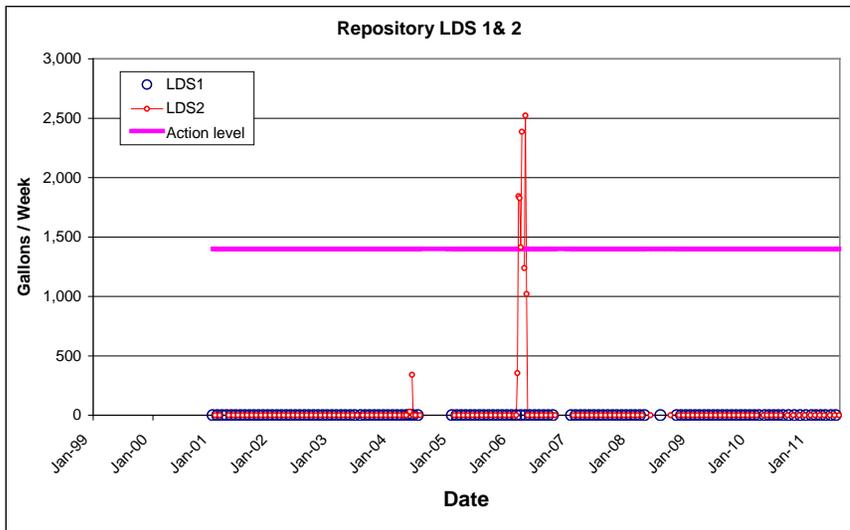
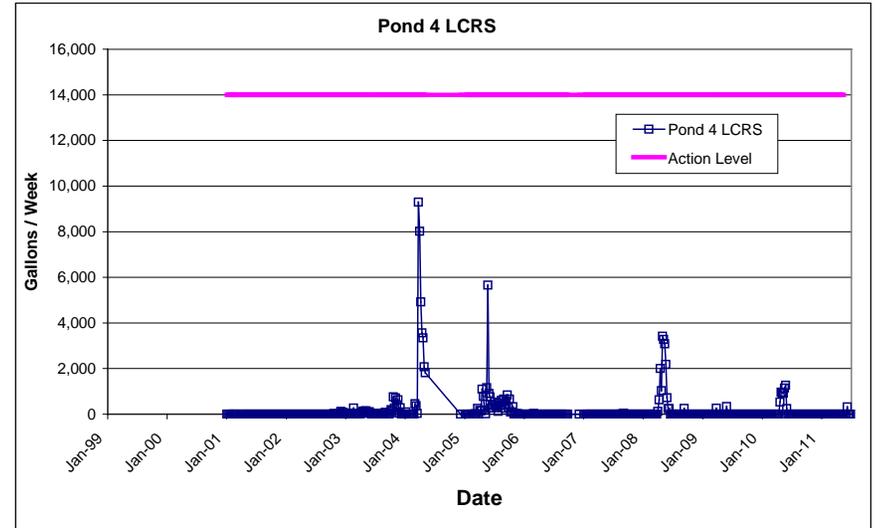
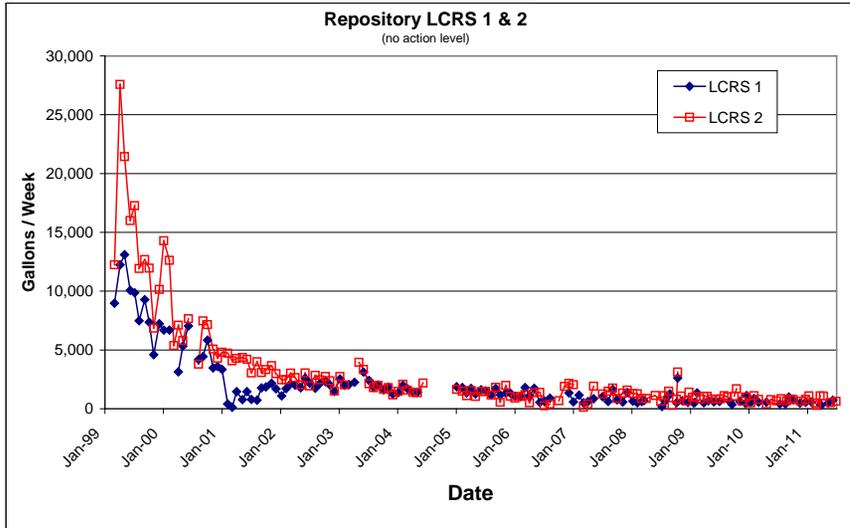
## 3.0 Schedule and Deliverables

Table 3 summarizes the schedule of recent and near-term activities for the Monticello NPL Sites and DOE reporting obligations.

*Table 3. Completed and Near-Term Activity and Deliverables Schedule*

<b>Activity/Deliverable</b>	<b>Status/Schedule</b>
FFA quarterly report: July–September 2011.	Submit to EPA and UDEQ by October 10, 2011.
Technical meeting to discuss biomonitoring and groundwater compliance strategy; June 27, 2011, Denver, Colorado.	Future scope of biomonitoring is not yet determined. Future scope of groundwater remediation is not yet determined.
Annual OU III water quality report.	Submit to EPA and UDEQ in September 2011.
Site Management Plan (Section 5 update-draft).	Submit to EPA and UDEQ in August 2011.
Annual site inspection.	September 2011.

Graphs Showing Performance History for Repository and Pond 4 Leachate Collection and Recovery System (LCRS) and Leak Detection System (LDS)



**Repository Area Surveillance Checklist**

Monthly Surveillance  Quarterly Surveillance (Feb., May, Aug., Nov.)

Storm Event Triggered Surveillance due to  inches of rainfall over the past 24 hours.

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<b>Condition of:</b>		
Fences and gates	YES	
Roads <sup>a</sup>	YES	
Signs	YES	
Site monuments	YES	
Drainage ditches <sup>a</sup>	YES	
Manholes	YES	
Vegetation	YES	
<b>Evidence of erosion of:</b>		
Top of disposal cell <sup>a</sup>	NO	
Disposal cell sideslopes <sup>a</sup>	NO	
Ditches	NO	
Surrounding area	NO	
<b>Evidence of:</b>		
Vandalism	NO	
Intrusion by livestock	NO	
Burrowing animal damage	NO	
Intrusion by humans	NO	
Accumulation of trash	NO	

**Additional Quarterly Surveillance Requirements**

Note: All transects, shown in Figure 3-1, must be walked during this inspection.

<b>Condition of:</b>		
Settlement plate structures		
Manholes <sup>b</sup>		
Sediment Ponds		
<b>Evidence of:</b>		
Structural Instability		

**Additional Comments**

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Signature Jed Moon  
Monticello LM Representative

Date 7-8-11

<sup>a</sup>Inspections required following a significant storm event  
<sup>b</sup>Open to inspect quarterly

**Repository Area Surveillance Checklist**

\_\_\_\_ Monthly Surveillance \_\_\_\_ Quarterly Surveillance (Feb., May, Aug., Nov.)

\_\_\_\_ Storm Event Triggered Surveillance due to \_\_\_\_ inches of rainfall over the past 24 hours.

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<b>Condition of:</b>		
Fences and gates	<u>yes</u>	_____
Roads <sup>a</sup>	<u>yes</u>	_____
Signs	<u>yes</u>	_____
Site monuments	<u>yes</u>	_____
Drainage ditches <sup>a</sup>	<u>yes</u>	_____
Manholes	<u>yes</u>	_____
Vegetation	<u>yes</u>	_____
<b>Evidence of erosion of:</b>		
Top of disposal cell <sup>a</sup>	<u>NO</u>	_____
Disposal cell sideslopes <sup>a</sup>	<u>NO</u>	_____
Ditches	<u>NO</u>	_____
Surrounding area	<u>NO</u>	_____
<b>Evidence of:</b>		
Vandalism	<u>NO</u>	_____
Intrusion by livestock	<u>NO</u>	_____
Burrowing animal damage	<u>NO</u>	_____
Intrusion by humans	<u>NO</u>	_____
Accumulation of trash	<u>NO</u>	_____

**Additional Quarterly Surveillance Requirements**

Note: All transects, shown in Figure 3-1, must be walked during this inspection.

<b>Condition of:</b>		
Settlement plate structures	<u>NO</u>	_____
Manholes <sup>b</sup>	<u>NO</u>	_____
Sediment Ponds	<u>NO</u>	_____
<b>Evidence of:</b>		
Structural Instability	<u>NO</u>	_____

**Additional Comments** \_\_\_\_\_  
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Signature Jodd Mann  
 Monticello LM Representative

Date 5-5-11

<sup>a</sup>Inspections required following a significant storm event  
<sup>b</sup>Open to inspect quarterly

**Repository Area Surveillance Checklist**

Monthly Surveillance  Quarterly Surveillance (Feb., May, Aug., Nov.)

Storm Event Triggered Surveillance due to \_\_\_\_\_ inches of rainfall over the past 24 hours.

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<b>Condition of:</b>		
Fences and gates	yes	
Roads <sup>a</sup>	yes	
Signs	yes	
Site monuments	yes	
Drainage ditches <sup>a</sup>	yes	
Manholes	yes	
Vegetation	yes	
<b>Evidence of erosion of:</b>		
Top of disposal cell <sup>a</sup>	NO	
Disposal cell sideslopes <sup>a</sup>	NO	
Ditches	NO	
Surrounding area	NO	
<b>Evidence of:</b>		
Vandalism	NO	
Intrusion by livestock	NO	
Burrowing animal damage	NO	
Intrusion by humans	NO	
Accumulation of trash	NO	

**Additional Quarterly Surveillance Requirements**

Note: All transects, shown in Figure 3-1, must be walked during this inspection.

<b>Condition of:</b>		
Settlement plate structures	_____	_____
Manholes <sup>b</sup>	_____	_____
Sediment Ponds	_____	_____
<b>Evidence of:</b>		
Structural Instability	_____	_____

**Additional Comments**  
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Signature Jedd Moran  
 Monticello LM Representative

Date 6-8-11

<sup>a</sup>Inspections required following a significant storm event  
<sup>b</sup>Open to inspect quarterly

**Repository Area Surveillance Checklist**

Monthly Surveillance  Quarterly Surveillance (Feb., May, Aug., Nov.)

Storm Event Triggered Surveillance due to  inches of rainfall over the past 24 hours.

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<b>Condition of:</b>		
Fences and gates	yes	
Roads <sup>a</sup>	yes	
Signs	yes	
Site monuments	yes	
Drainage ditches <sup>a</sup>	yes	
Manholes	yes	
Vegetation	yes	
<b>Evidence of erosion of:</b>		
Top of disposal cell <sup>a</sup>	no	
Disposal cell sideslopes <sup>a</sup>	no	
Ditches	no	
Surrounding area	no	
<b>Evidence of:</b>		
Vandalism	no	
Intrusion by livestock	no	
Burrowing animal damage	no	
Intrusion by humans	no	
Accumulation of trash	no	

**Additional Quarterly Surveillance Requirements**

Note: All transects, shown in Figure 3-1, must be walked during this inspection.

<b>Condition of:</b>		
Settlement plate structures		
Manholes <sup>b</sup>		
Sediment Ponds		
<b>Evidence of:</b>		
Structural Instability		

**Additional Comments**

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Signature Jedd Moon  
Monticello LM Representative

Date 6-29-11

<sup>a</sup>Inspections required following a significant storm event  
<sup>b</sup>Open to inspect quarterly

**Monthly Pond 4 Surveillance Checklist**

Level of Water in Pond 4 4.2

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
<b>Condition of:</b>		
Fences, gates, and locks	<u>yes</u>	_____
Roads	<u>yes</u>	_____
Signs	<u>yes</u>	_____
Visible piping	<u>yes</u>	_____
Visible liner and anchors	<u>yes</u>	_____
Rescue equipment	<u>yes</u>	_____
 <b>Evidence of erosion of:</b>		
Top of Pond 4 berm	<u>no</u>	_____
Pond 4 sideslopes	<u>no</u>	_____
Ditches	<u>no</u>	_____
Surrounding area	<u>no</u>	_____
Seepage from Pond 4	<u>no</u>	_____
Overtopping of Pond 4	<u>no</u>	_____
 <b>Evidence of:</b>		
Vandalism	<u>no</u>	_____
Intrusion by wildlife	<u>no</u>	_____
Intrusion by humans	<u>no</u>	_____
Accumulation of trash	<u>no</u>	_____

**Additional Comments** \_\_\_\_\_  
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Monticello LM Representative Jedd Moon Date 4-8-11

**Monthly Pond 4 Surveillance Checklist**

Level of Water in Pond 4 3.8

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
<b>Condition of:</b>		
Fences, gates, and locks	<u>YES</u>	_____
Roads	<u>YES</u>	_____
Signs	<u>YES</u>	_____
Visible piping	<u>YES</u>	_____
Visible liner and anchors	<u>YES</u>	_____
Rescue equipment	<u>YES</u>	_____
<b>Evidence of erosion of:</b>		
Top of Pond 4 berm	<u>NO</u>	_____
Pond 4 sideslopes	<u>NO</u>	_____
Ditches	<u>NO</u>	_____
Surrounding area	<u>NO</u>	_____
Seepage from Pond 4	<u>NO</u>	_____
Overtopping of Pond 4	<u>NO</u>	_____
<b>Evidence of:</b>		
Vandalism	<u>NO</u>	_____
Intrusion by wildlife	<u>NO</u>	_____
Intrusion by humans	<u>NO</u>	_____
Accumulation of trash	<u>NO</u>	_____

**Additional Comments**

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Monticello LM Representative Judd Moon Date 5-5-11

**Monthly Pond 4 Surveillance Checklist**

Level of Water in Pond 4 3.4

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
<b>Condition of:</b>		
Fences, gates, and locks	<u>yes</u>	_____
Roads	<u>yes</u>	_____
Signs	<u>yes</u>	_____
Visible piping	<u>yes</u>	_____
Visible liner and anchors	<u>yes</u>	_____
Rescue equipment	<u>yes</u>	_____
 <b>Evidence of erosion of:</b>		
Top of Pond 4 berm	<u>NO</u>	_____
Pond 4 sideslopes	<u>NO</u>	_____
Ditches	<u>NO</u>	_____
Surrounding area	<u>NO</u>	_____
Seepage from Pond 4	<u>NO</u>	_____
Overtopping of Pond 4	<u>NO</u>	_____
 <b>Evidence of:</b>		
Vandalism	<u>NO</u>	_____
Intrusion by wildlife	<u>NO</u>	_____
Intrusion by humans	<u>NO</u>	_____
Accumulation of trash	<u>NO</u>	_____

**Additional Comments** \_\_\_\_\_  
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Monticello LM Representative Judd Maun Date 6-8-11

**Monthly Pond 4 Surveillance Checklist**

Level of Water in Pond 4 3.1

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
<b>Condition of:</b>		
Fences, gates, and locks	<u>Yes</u>	_____
Roads	<u>Yes</u>	_____
Signs	<u>Yes</u>	_____
Visible piping	<u>Yes</u>	_____
Visible liner and anchors	<u>Yes</u>	_____
Rescue equipment	<u>Yes</u>	_____
<b>Evidence of erosion of:</b>		
Top of Pond 4 berm	<u>NO</u>	_____
Pond 4 sideslopes	<u>NO</u>	_____
Ditches	<u>NO</u>	_____
Surrounding area	<u>NO</u>	_____
Seepage from Pond 4	<u>NO</u>	_____
Overtopping of Pond 4	<u>NO</u>	_____
<b>Evidence of:</b>		
Vandalism	<u>NO</u>	_____
Intrusion by wildlife	<u>NO</u>	_____
Intrusion by humans	<u>NO</u>	_____
Accumulation of trash	<u>NO</u>	_____

**Additional Comments** \_\_\_\_\_  
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Monticello LM Representative Judd Moon Date 6-28-11

**Monticello Long-Term Surveillance and Maintenance  
Temporary Storage Facility Record Book  
Inspection Report**

Acceptable?  
Yes / No

- Yes Was the gate locked upon arrival?
- Yes Are signs posted in accordance with Section 3.4.4?
- Yes Are all postings legible?
- Yes Are enclosures on the concrete bin and stored drum containers tight?
- Yes Are containers in good physical condition (no rust, no holes, no bulges, etc.)?
- 1.5 How much radiologically contaminated material is in the concrete bin? Note: the material should be shipped when the volume in storage approaches 75 percent of the storage capacity.
- Yes Is the surface area of the TSF in good physical condition (no erosion, no flood damage, no excessive vegetation growth, etc.)?
- Yes Has radiological monitoring been conducted in accordance with Section 3.4.5?
- Yes Is the security fence in good condition?

Comments: \_\_\_\_\_  
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*Judd Moran*  
Signature of Monticello LM Representative

4-9-11  
Date of Inspection

**Monticello Long-Term Surveillance and Maintenance  
Temporary Storage Facility Record Book  
Inspection Report**

Acceptable?  
Yes / No

- yes Was the gate locked upon arrival?
- yes Are signs posted in accordance with Section 3.4.4?
- yes Are all postings legible?
- yes Are enclosures on the concrete bin and stored drum containers tight?
- yes Are containers in good physical condition (no rust, no holes, no bulges, etc.)?
- 1.5 How much radiologically contaminated material is in the concrete bin? Note: the material should be shipped when the volume in storage approaches 75 percent of the storage capacity.
- yes Is the surface area of the TSF in good physical condition (no erosion, no flood damage, no excessive vegetation growth, etc.)?
- yes Has radiological monitoring been conducted in accordance with Section 3.4.5?
- yes Is the security fence in good condition?

Comments: \_\_\_\_\_  
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Judd Moran  
Signature of Monticello LM Representative

5-5-11  
Date of Inspection

**Monticello Long-Term Surveillance and Maintenance  
Temporary Storage Facility Record Book  
Inspection Report**

Acceptable?

Yes / No

- yes Was the gate locked upon arrival?
- yes Are signs posted in accordance with Section 3.4.4?
- yes Are all postings legible?
- yes Are enclosures on the concrete bin and stored drum containers tight?
- yes Are containers in good physical condition (no rust, no holes, no bulges, etc.)?
- 1.5 How much radiologically contaminated material is in the concrete bin? Note: the material should be shipped when the volume in storage approaches 75 percent of the storage capacity.
- yes Is the surface area of the TSF in good physical condition (no erosion, no flood damage, no excessive vegetation growth, etc.)?
- yes Has radiological monitoring been conducted in accordance with Section 3.4.5?
- yes Is the security fence in good condition?

Comments: \_\_\_\_\_  
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Todd Moran  
Signature of Monticello LM Representative

6-8-11  
Date of Inspection

**Monticello Long-Term Surveillance and Maintenance  
Temporary Storage Facility Record Book  
Inspection Report**

Acceptable?

Yes / No

yes Was the gate locked upon arrival?

yes Are signs posted in accordance with Section 3.4.4?

yes Are all postings legible?

yes Are enclosures on the concrete bin and stored drum containers tight?

yes Are containers in good physical condition (no rust, no holes, no bulges, etc.)?

1.5 How much radiologically contaminated material is in the concrete bin? Note: the material should be shipped when the volume in storage approaches 75 percent of the storage capacity.

yes Is the surface area of the TSF in good physical condition (no erosion, no flood damage, no excessive vegetation growth, etc.)?

yes Has radiological monitoring been conducted in accordance with Section 3.4.5?

yes Is the security fence in good condition?

Comments: \_\_\_\_\_  
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*Jared Moon*  
Signature of Monticello LM Representative

6-28-11  
Date of Inspection

MONTHLY CLIMATOLOGICAL SUMMARY for APR. 2011

NAME: Monticello CITY: STATE:  
 ELEV: 7000 ft LAT: 37° 36' 00" N LONG: 122° 06' 00" W

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	53.5	68.2	5:00p	38.8	6:00a	11.9	0.4	0.00	4.7	28.0	5:00p	NNE
2	56.8	68.7	2:30p	42.9	7:30a	8.6	0.4	0.00	10.6	36.0	3:30p	SW
3	40.8	56.7	12:30a	25.7	12:00m	24.2	0.0	0.01	17.0	42.0	8:30p	NNW
4	34.6	49.2	5:00p	22.7	7:00a	30.4	0.0	0.00	6.0	27.0	12:30a	NNW
5	46.1	61.3	6:00p	28.6	7:00a	18.9	0.0	0.00	8.4	31.0	10:30a	S
6	45.3	53.4	12:00p	36.3	12:00m	19.7	0.0	0.00	7.6	29.0	2:30p	SE
7	41.7	52.3	4:30p	34.5	4:00a	23.3	0.0	0.00	14.3	39.0	4:00p	SSW
8	44.2	49.7	5:00p	39.5	6:30a	20.8	0.0	0.00	16.0	41.0	1:30p	S
9	34.1	42.5	12:30a	23.1	11:00p	30.9	0.0	0.02	13.5	41.0	9:30a	SSW
10	32.0	44.0	5:00p	17.3	6:30a	33.0	0.0	0.00	7.8	29.0	2:30p	NNW
11	40.6	54.2	4:00p	26.3	6:30a	24.4	0.0	0.00	6.5	22.0	5:00p	NNW
12	46.9	58.8	4:00p	34.1	5:00a	18.1	0.0	0.00	7.8	29.0	2:00p	SW
13	47.9	57.7	4:00p	33.1	6:00a	17.1	0.0	0.00	10.5	32.0	10:30p	SSW
14	39.6	47.3	3:30p	32.0	5:00a	25.4	0.0	0.00	15.6	43.0	9:30a	NNW
15	39.8	53.0	6:00p	26.3	4:00a	25.2	0.0	0.00	8.2	26.0	8:30a	N
16	49.7	63.8	3:00p	34.3	5:30a	15.3	0.0	0.00	6.0	25.0	6:30p	NNW
17	56.1	68.1	2:30p	43.2	6:00a	9.1	0.2	0.00	8.3	30.0	4:30p	SSW
18	52.6	62.1	2:00p	40.7	12:00m	12.4	0.0	0.05	10.0	34.0	4:30p	SSW
19	46.1	56.9	5:30p	36.1	6:30a	18.9	0.0	0.06	7.6	41.0	12:30a	NNW
20	52.2	63.5	4:30p	38.2	3:00a	12.8	0.0	0.00	8.1	33.0	2:00p	NNW
21	50.8	64.0	4:30p	38.1	11:30p	14.2	0.0	0.00	13.6	41.0	3:00p	NNW
22	44.6	55.6	4:30p	34.0	2:30a	20.4	0.0	0.00	5.9	38.0	11:30a	NNE
23	45.1	54.6	2:30p	39.9	7:00a	19.9	0.0	0.08	7.4	25.0	3:00p	NNW
24	40.0	46.5	5:00p	35.6	11:00p	25.0	0.0	0.42	4.8	22.0	6:30p	NNW
25	41.5	52.7	4:00p	33.8	1:00a	23.5	0.0	0.25	7.8	27.0	6:30p	NNW
26	34.7	42.1	2:00p	29.0	12:00m	30.3	0.0	0.07	13.3	39.0	3:00p	NNW
27	35.1	46.5	5:00p	25.1	2:30a	29.9	0.0	0.00	8.9	27.0	6:00p	NNE
28	44.4	58.7	6:30p	28.1	6:30a	20.6	0.0	0.00	7.4	26.0	2:00p	NNW
29	45.1	59.1	1:30p	27.9	12:00m	19.9	0.0	0.00	13.7	42.0	9:30p	NNW
30	31.5	39.8	4:00p	22.6	3:30a	33.5	0.0	0.00	12.4	34.0	1:30p	NNW
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43.8	68.7	2	17.3	10	637.6	1.0	0.96	9.7	43.0	14	NNW	

Max >= 90.0: 0  
 Max <= 32.0: 0  
 Min <= 32.0: 13  
 Min <= 0.0: 0  
 Max Rain: 0.42 ON 04/24/11  
 Days of Rain: 7 (>.01 in) 2 (>.1 in) 0 (>1 in)  
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for MAY. 2011

NAME: Monticello CITY: STATE:  
 ELEV: 7000 ft LAT: 37° 36' 00" N LONG: 122° 06' 00" W

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	34.0	43.0	2:00p	25.4	6:00a	31.0	0.0	0.00	13.5	34.0	2:30p	NNW
2	39.7	51.3	4:00p	28.2	6:30a	25.3	0.0	0.00	8.9	34.0	3:00p	N
3	46.9	58.9	5:00p	32.8	3:30a	18.1	0.0	0.00	9.2	28.0	12:30p	SSW
4	50.6	62.3	2:30p	40.1	5:30a	14.4	0.0	0.00	10.9	29.0	1:00p	N
5	53.1	67.6	5:00p	38.4	6:00a	12.2	0.3	0.00	5.3	22.0	6:00p	N
6	60.3	73.3	4:00p	42.8	5:30a	6.3	1.7	0.00	7.9	33.0	2:30p	SW
7	60.9	72.1	5:00p	45.3	6:30a	5.8	1.7	0.00	7.9	33.0	4:00p	SSW
8	58.6	70.6	4:00p	45.1	4:30a	7.2	0.8	0.00	14.6	39.0	10:30a	SSW
9	47.1	55.5	12:30a	34.7	10:00a	17.9	0.0	0.21	14.1	46.0	1:30p	S
10	42.2	52.0	4:00p	31.9	4:30a	22.8	0.0	0.00	8.2	26.0	10:30a	SW
11	43.8	53.1	3:00p	35.9	6:30a	21.2	0.0	0.00	9.2	32.0	3:00p	NNW
12	47.8	59.7	4:00p	33.3	6:00a	17.2	0.0	0.00	7.8	28.0	4:30p	N
13	56.0	70.1	7:00p	40.7	5:30a	9.9	0.9	0.00	4.9	23.0	11:30a	N
14	57.4	69.3	3:30p	42.4	6:30a	7.9	0.4	0.00	6.3	27.0	11:00a	NNW
15	58.8	69.6	5:00p	45.6	5:30a	7.0	0.8	0.00	12.6	34.0	10:00p	SSW
16	55.6	65.7	4:00p	46.3	4:30a	9.4	0.0	0.00	14.3	42.0	1:00p	SSW
17	48.6	57.6	5:00p	37.7	8:30a	16.4	0.0	0.00	8.4	26.0	4:30a	SW
18	40.7	49.7	11:30a	35.3	10:30p	24.3	0.0	0.19	11.2	36.0	12:30p	S
19	37.0	45.2	2:30p	33.0	5:30a	28.0	0.0	0.09	8.6	25.0	2:30p	SSW
20	40.1	49.2	3:00p	32.9	5:30a	24.9	0.0	0.04	5.4	32.0	3:00p	S
21	48.6	60.2	6:00p	36.1	4:00a	16.4	0.0	0.00	4.7	21.0	10:00a	NNW
22	55.0	67.7	4:00p	43.8	6:30a	10.1	0.2	0.00	6.3	31.0	6:00p	SSW
23	53.8	64.2	6:00p	43.4	6:30a	11.2	0.0	0.00	9.8	42.0	5:00p	SSW
24	46.7	54.6	6:30p	41.5	4:30a	18.3	0.0	0.09	8.1	35.0	3:00p	NNW
25	52.6	65.4	4:30p	37.0	6:30a	12.4	0.0	0.00	6.0	17.0	4:00a	NNW
26	58.4	71.8	4:30p	45.8	6:00a	7.9	1.3	0.00	7.5	30.0	3:30p	SSW
27	61.2	73.0	4:30p	42.2	6:30a	6.0	2.3	0.00	8.3	31.0	12:30p	NW
28	64.6	76.3	6:00p	51.3	5:00a	3.7	3.3	0.00	13.0	42.0	10:30p	SSW
29	60.8	70.7	3:00p	49.7	12:00m	5.1	0.9	0.00	23.9	52.0	1:00p	SSW
30	47.0	57.1	4:00p	35.9	6:30a	18.0	0.0	0.00	9.8	32.0	8:00a	SW
31	55.2	69.6	5:30p	36.5	4:00a	10.5	0.7	0.00	6.8	29.0	11:30a	SSW
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	51.1	76.3	28	25.4	1	446.8	15.3	0.62	9.5	52.0	29	SSW

Max >= 90.0: 0  
 Max <= 32.0: 0  
 Min <= 32.0: 3  
 Min <= 0.0: 0

Max Rain: 0.21 ON 05/09/11

Days of Rain: 5 (>.01 in) 2 (>.1 in) 0 (>1 in)

Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for JUN. 2011

NAME: Monticello CITY: STATE:  
 ELEV: 7000 ft LAT: 37° 36' 00" N LONG: 122° 06' 00" W

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	64.7	77.8	3:30p	47.4	6:00a	4.0	3.8	0.00	11.2	37.0	4:00p	SSW
2	60.2	70.4	5:00p	48.2	12:00m	5.7	0.9	0.00	13.7	38.0	4:00p	SSW
3	55.7	68.7	6:00p	39.3	6:00a	9.8	0.5	0.00	6.6	27.0	2:00p	NNW
4	62.9	77.9	5:30p	44.2	5:30a	5.8	3.8	0.00	8.6	33.0	4:00p	SSW
5	66.2	79.7	5:00p	48.1	5:30a	3.8	5.0	0.00	6.5	30.0	3:30p	WSW
6	65.2	78.5	3:30p	51.0	6:30a	3.9	4.1	0.00	13.5	44.0	3:30p	SSW
7	58.6	71.3	5:30p	41.9	6:00a	7.8	1.4	0.00	7.0	24.0	3:30p	SSW
8	60.9	75.6	5:00p	40.6	6:00a	6.7	2.5	0.00	9.1	33.0	5:30p	W
9	61.2	73.0	5:00p	47.1	5:00a	5.6	1.8	0.00	6.6	29.0	2:30p	W
10	63.1	76.5	4:00p	47.7	6:00a	5.1	3.2	0.00	6.4	24.0	4:00p	NNW
11	64.0	75.9	5:30p	47.9	6:30a	4.3	3.3	0.00	8.1	27.0	2:00p	SSW
12	63.2	76.0	4:30p	47.4	6:00a	4.5	2.7	0.00	7.7	32.0	12:30p	SW
13	63.6	76.2	3:30p	47.9	6:30a	4.6	3.2	0.00	7.2	29.0	12:30p	W
14	64.6	75.6	5:00p	50.8	5:30a	3.6	3.2	0.00	9.7	30.0	12:30p	NNW
15	69.3	81.8	5:30p	51.3	5:30a	2.3	6.6	0.00	6.7	24.0	3:30p	NW
16	70.3	80.6	4:00p	56.9	6:30a	0.7	6.0	0.01	11.1	38.0	2:30p	SSW
17	60.4	69.8	7:00p	50.9	6:30a	5.0	0.4	0.00	7.9	32.0	4:00p	NNW
18	64.6	76.8	5:00p	48.5	6:00a	4.0	3.6	0.00	7.2	26.0	3:00p	NNW
19	57.6	71.1	1:00p	44.2	8:30p	8.0	0.7	0.07	10.0	53.0	5:00p	NNW
20	55.2	67.1	5:00p	44.1	1:30a	9.9	0.1	0.00	10.5	31.0	4:30a	NNW
21	62.7	77.0	4:30p	46.9	4:30a	5.5	3.2	0.00	7.1	26.0	4:30p	NW
22	69.4	84.3	5:30p	53.5	6:00a	2.9	7.3	0.00	4.6	20.0	4:30p	WNW
23	74.8	86.5	3:30p	58.7	6:30a	1.0	10.8	0.00	8.5	31.0	3:00p	SSW
24	76.9	85.4	4:30p	67.4	3:30a	0.0	11.9	0.00	10.2	30.0	2:30p	W
25	72.4	84.4	4:00p	55.3	6:30a	0.7	8.1	0.00	7.4	29.0	2:00p	WNW
26	71.1	83.0	3:00p	55.5	6:30a	1.5	7.6	0.00	7.8	35.0	3:00p	W
27	72.5	85.5	5:00p	50.1	6:30a	1.3	8.8	0.00	7.1	40.0	3:00p	N
28	75.5	87.1	5:30p	62.7	7:00a	0.0	10.5	0.00	8.1	30.0	2:00p	SSW
29	67.2	73.3	2:30a	62.7	6:30a	0.1	0.7	0.00	3.8	20.0	2:30a	S
30												
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	65.3	87.1	28	39.3	3	118.1	125.7	0.08	8.3	53.0	19	SSW

Max >= 90.0: 0  
 Max <= 32.0: 0  
 Min <= 32.0: 0  
 Min <= 0.0: 0

Max Rain: 0.07 ON 06/19/11

Days of Rain: 1 (>.01 in) 0 (>.1 in) 0 (>1 in)

Heat Base: 65.0 Cool Base: 65.0 Method: Integration

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