

# **Monticello, Utah, National Priorities List Sites Federal Facility Agreement (FFA) Quarterly Report: July 1–September 30, 2012**

## **1.0 Introduction**

This report summarizes the status of the Monticello Vicinity Properties (MVP) and the Monticello Mill Tailings Site (MMTS), located in and near Monticello, Utah, for the period of July through September 2012. The report also includes a summary of projected near-term activity and reporting requirements. Quarterly reports are submitted to the U.S. Environmental Protection Agency (EPA) and the Utah Department of Environmental Quality (UDEQ) to apprise project managers of project status and the near-term schedule of activities and reporting requirements.

The MMTS and MVP were placed on the 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 comply with 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 and surface water of Operable Unit III (OU III) of the MMTS. OU III remedial actions are ongoing. As of December 2003, the MMTS and MVP are administered as the Monticello Disposal and Processing Site by the DOE Office of Legacy Management (LM).

The status of the MMTS and MVP were most recently evaluated in the annual site inspection conducted on September 25–26, 2012. The status of the MMTS and MVP were also evaluated in the most recent FFA meeting held in Monticello, Utah, on September 27, 2012.

## **2.0 MMTS Status**

The fourth five-year review of the MMTS, completed in June 2012, concluded that the MMTS remedy is protective of human health and the environment.

### **2.1 Operable Unit I**

OU I of the MMTS consists of the onsite waste disposal cell and supporting infrastructure (repository), and the property comprising the former Monticello uranium and vanadium-ore processing mill (mill site).

#### **2.1.1 Monticello LM Repository (DOE-Owned)**

The repository is the site of a waste disposal cell that contains radioactively contaminated soil, sediment, and debris removed from the former uranium and vanadium ore processing mill and surrounding private and municipal properties in Monticello, Utah. The repository includes

infrastructure that is maintained by onsite personnel to ensure that the wastes remain isolated from the environment.

As directed by Section 3.2 of the LM *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (LTSM plan), monthly and quarterly inspections of the repository are conducted to assess conditions that may affect protection of human health and the environment.

Inspection findings for the reporting period, with reference to the applicable section of the LTSM plan, include the following:

- **Condition of disposal site facilities (Section 3.2.2):** Monthly and quarterly inspections identified no anomalous conditions at the repository site (see attached Repository Area Surveillance Checklists).
- **Meteorological monitoring and storm events (Sections 3.2.2.2, 3.2.2.3, and 4.3.1):** No significant storm events occurred during this quarter that required non-routine surveillance of affected properties (those designated as supplemental standards cleanup properties). No measurable precipitation was recorded for the quarter (see attached monthly climatological summary forms).
- **Pond 4 surveillance (Section 3.2.3):** Monthly inspections identified no anomalous conditions at Pond 4 (see attached Monthly Pond 4 Surveillance Checklists).
- **Disposal Cell and Pond 4 Leachate Collection and Removal System (LCRS) and Leak Detection System (LDS) Operation (Section 3.3):**
  - Disposal cell leachate collection in the upper sumps (i.e., the 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 (LDS) remains at zero (see attached graph).
  - All disposal cell and Pond 4 leachate management equipment (pumps, pump controls, monitoring devices, and data transmission devices) are functional.
- **Temporary Storage Facility Operation and Maintenance (Section 3.4):**
  - The inventory of contaminated material in the Temporary Storage Facility (TSF) is approximately 4 cubic yards (see attached TSF Record Book Inspection Report). 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 (TSF capacity is about 100 cubic yards). The most recent transfer of material from the TSF to GJDS occurred in June 2010 (documented in the July 1–September 30, 2010, quarterly report).

### 2.1.2 Former Mill Site (City-Owned)

Surveillance of the former mill site is conducted to ensure compliance with institutional controls implemented to preserve the OU I remedy for soil and groundwater. Findings for this quarter are:

- Routine surveillance of the former mill site (LTSM plan Section 4.2.2): no evidence of non-conformance with groundwater use restrictions or land use restrictions was observed.

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

Surveillance of the Peripheral Properties is conducted to ensure compliance with institutional controls implemented to preserve the OU II remedy for soil and groundwater. Findings for this quarter, with reference to the applicable section of the LTSM plan, are:

- **Routine surveillance of the Montezuma Creek Restrictive Easement Area (Section 4.2.6):** No evidence of non-conformance with land use restrictions, groundwater use restrictions, or other institutional controls was observed.
- **Routine surveillance of supplemental standards property MS-00176-VL (Section 4.2.6):** No evidence of non-conformance with the land use restriction on building construction or evidence of excessive erosion was observed. However, minor areas of disturbed soils on a city-owned public road right-of-way south and below MS-00176-VL (private property) were discovered. No evidence of soil contamination or impact to supplemental standards areas was detected.
- The U.S. General Services Administration, in cooperation with DOE, disposed of property MP-01081-VL, located east of the repository site, to non-DOE ownership. The transaction was completed in August 2011. A small segment of the property is within the Groundwater Management Area (see below).

## 2.3 Operable Unit III (Contaminated Groundwater and Surface Water)

### 2.3.1 Groundwater Management Area

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). The affected properties comprise the Monticello Groundwater Restricted Area, as defined by the State of Utah Division of Water Rights. Surveillance findings for this quarter are:

- **Routine surveillance of the Monticello Groundwater Restricted Area (Section 4.2.7 and Appendix I):** No evidence of non-conformance with groundwater use restrictions was observed.

### 2.3.2 Groundwater Remediation

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 discharged to Montezuma Creek.

OU III remedy performance is evaluated and reported annually (LTSM plan Section 5.4). Groundwater treatment by this system began in June 2005. The following summarizes treatment system performance from July through September 2012.

- The system operated continuously during the quarter except for a brief shutdown from the afternoon of August 6 until the morning of August 7, caused by a constriction in the out-flow pipe that was promptly cleaned out.
- Effluent discharge to Montezuma Creek did not exceed the allowed rate (10 gallons per minute [gpm]).
- Iron concentration and pH for the quarter were within discharge allowances (see Table 1).
- Approximately 942,000 gallons of water were treated during the reporting period. The effective treatment rate was 7.1 gpm.
- Approximately 1.55 pounds of uranium were removed from the aquifer during the quarter as a result of groundwater treatment.
- The reactive media was last exchanged during October 10–12, 2011. Each treatment cell treated approximately 2.1 million gallons since the previous exchange in October 2010.
- Approximately 4.0 million gallons of water (2.0 million gallons per cell) have been treated since the last media exchange. Treatment of approximately 3 million gallons of groundwater per cell at influent uranium concentrations of 300 to 350 micrograms per liter and flow of 10 gpm is an approximate target volume for future media exchange.
- The next media exchange at the ex situ treatment system is scheduled to occur in November 2012. As stated in Program Directive MNT-2010-02, and the associated *Monticello Mill Tailings Site Operable Unit III Ex Situ Treatment System Operating Plan*, December 2009, Section 4.2, DOE will operate the system as it is currently configured such that the total flow-rate is not reduced to less than 40 percent of the discharge allowance to Montezuma Creek (10 gpm) in response to increasing concentration of uranium in the effluent. This condition will prompt DOE to replace the reactive media. The flow rate will be reduced incrementally when effluent concentrations of uranium exceed 150 micrograms/liter.

*Table 1. Treatment System Compliance Summary*

<b>Treatment System Effluent to Montezuma Creek</b>	<b>July 2012</b>	<b>August 2012</b>	<b>September 2012</b>
pH <sup>a</sup>	6.90	7.04	7.05
Iron (total, milligrams per liter) <sup>b</sup>	14	13	13

<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	July 2012	August 2012	September 2012 <sup>a</sup>
Gallons treated	347,600	300,200	294,200
Average treatment rate, gpm	7.8	6.7	6.8
Uranium influent, micrograms per liter	330	320	320
Uranium outfall, micrograms per liter	120	120	140
Uranium mass removed, pounds	0.61	0.50	0.44
Cumulative uranium mass removed, pounds	55.50	56.00	56.44
Cumulative volume treated, gallons	23,799,700	24,099,900	24,394,100

<sup>a</sup> Cut-off date is September 27, 2012.

### 2.3.3 Biomonitoring

Biomonitoring has been conducted since 2004 to evaluate the potential risk to ecological receptors from exposure to selenium in OU III wetland habitat (Section 5.5 of the LTSM plan). The scope of biomonitoring for 2012 is presented in *Sampling and Analysis Plan for Biomonitoring at Monticello, Utah, 2012 Field Season*, February 2012. The scope for 2012 was to collect samples of benthic macroinvertebrates from Wetland 3 for analysis of selenium and to conduct ecological surveys to assess foraging behavior of avian species associated with the wetland. The 2012 activities were implemented to confirm results from previous years of OU III biomonitoring. Field activities for 2012 biomonitoring were completed in June 2012. A report documenting the 2012 biomonitoring, *Results of 2012 Biomonitoring and Ecological Studies at the Monticello Mill Tailings Site Monticello, Utah*, was issued to EPA and UDEQ in final form on September 7, 2012.

## 3.0 MVP Status

The fourth five-year review of the MVP, completed in June 2012, concluded that the MVP remedy is protective of human health and the environment.

### 3.1 City Streets and Utilities, Utah Department of Transportation (UDOT) Rights-of-Way, and Property MS-00176-VL

Surveillance findings for the reporting period, with reference to the applicable section of the LTSM plan, include the following:

- Routine surveillance of city street and utility corridors and UDOT rights-of-way (supplemental standards properties; Section 4.2.3):
  - Onsite LM contractor continued to coordinate with the City of Monticello, UDOT, and utility company officials regarding radiological control at roadway and utility excavations.
  - No erosion or unauthorized excavations occurred on the Highway 191 embankment at Montezuma Creek.

- Upgrades to City, State, and private utility infrastructure resumed during the reporting period. Two cubic feet of radiologically contaminated material was encountered at the excavations and transferred to the TSF. Approximately 4 cubic yards of radiologically contaminated material remain in the TSF and is managed in accordance with Section 4.2.3.2 of the LTSM plan.
- Routine surveillance of supplemental standards property MS-00176-VL (Section 4.2.5) identified no violation of the land use restriction institutional control.

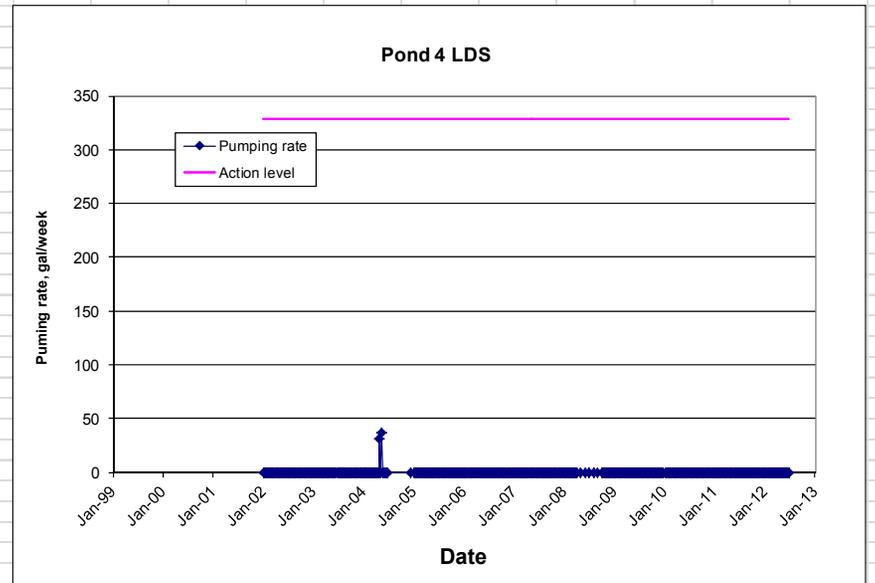
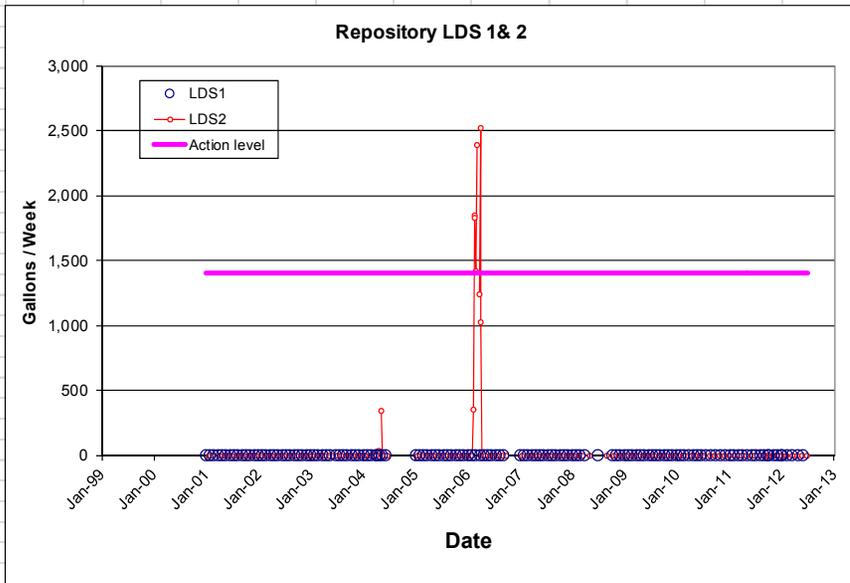
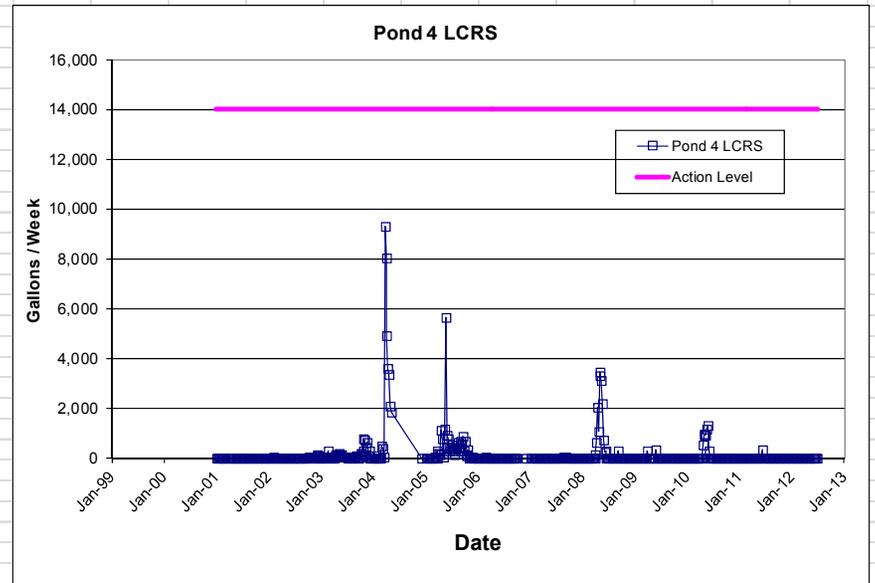
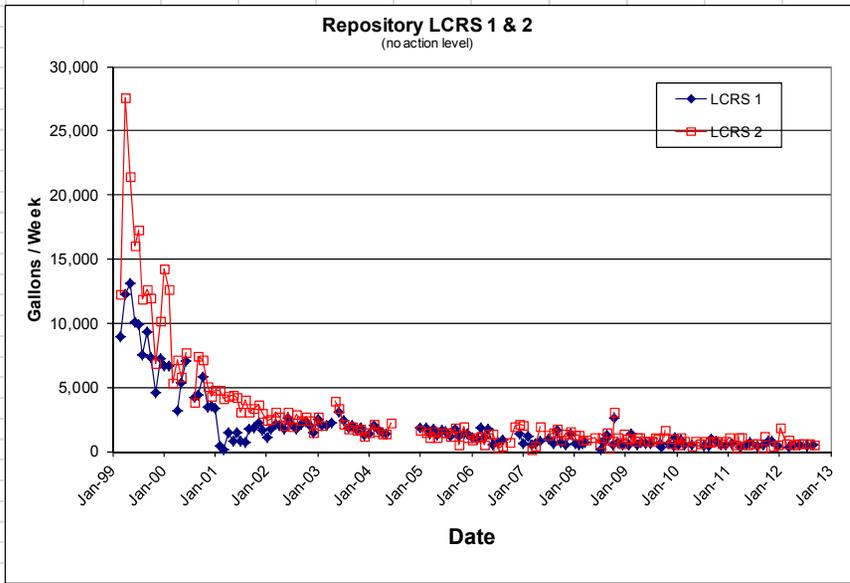
## 4.0 Schedule

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

*Table 3. Schedule of Near-Term Deliverables and Activities*

<b>Activity</b>	<b>Schedule</b>
Fall 2012 hydrologic monitoring event.	Scheduled for the week of October 15, 2012.
FFA quarterly report: July–September 2012.	Submit to EPA and UDEQ by October 10, 2012.
Treatment system media exchange.	Scheduled for the month of November 2012.
FFA quarterly report: October–December 2012.	Submit to EPA and UDEQ by January 10, 2013.
FFA semiannual meeting.	Fall 2012 meeting conducted in Monticello, Utah, on September 27, 2012.  Spring 2013 FFA meeting scheduled for the week of April 8, 2013.
OU III biomonitoring results.	Results submitted to EPA and UDEQ on September 7, 2012.
OU III annual water quality report.	Submit report to EPA and UDEQ in November or December 2012.
Annual site inspection, 2012.	Completed September 25–26, 2012. DOE and EPA in attendance.
Annual site inspection report (penalty milestone).	Submit site inspection report to EPA and UDEQ by December 31, 2012.
Annual site inspection, 2013.	Scheduled for the week of September 9, 2013.

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



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July 2012 Monthly

### Repository Area Surveillance Checklist

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

NA Storm Event Triggered Surveillance due to NA 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>	<u>Broken or missing top wire strand in 2 locations along north repository fence. Fence integrity still intact.</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>Yes</u>	
Disposal cell sideslopes <sup>a</sup>	<u>Yes</u>	
Ditches	<u>Yes</u>	
Surrounding area	<u>Yes</u>	
<b>Evidence of:</b>		
Vandalism	<u>Yes</u>	
Intrusion by livestock	<u>Yes</u>	
Burrowing animal damage	<u>Yes</u>	
Intrusion by humans	<u>Yes</u>	
Accumulation of trash	<u>Yes</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>NA-monthly</u>	
Manholes <sup>b</sup>	<u>NA-monthly</u>	
Sediment Ponds	<u>NA-monthly</u>	
<b>Evidence of:</b>		
Structural Instability	<u>NA-monthly</u>	

#### Additional Comments

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\_\_\_\_\_  
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Signature Jerry Mattson Jerry Mattson  
Monticello LM Representative

Date 7/11/12

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

Figure 3-5. Example Repository Area Surveillance Checklist

## Repository Area Surveillance Checklist

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

NA Storm Event Triggered Surveillance due to NA 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>Yes</u>	
Disposal cell sideslopes <sup>a</sup>	<u>Yes</u>	
Ditches	<u>Yes</u>	
Surrounding area	<u>Yes</u>	
<b>Evidence of:</b>		
Vandalism	<u>Yes</u>	
Intrusion by livestock	<u>Yes</u>	
Burrowing animal damage	<u>Yes</u>	
Intrusion by humans	<u>Yes</u>	
Accumulation of trash	<u>Yes</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>Yes</u>	
Manholes <sup>b</sup>	<u>Yes</u>	
Sediment Ponds	<u>Yes</u>	
<b>Evidence of:</b>		
Structural Instability	<u>Yes</u>	

### Additional Comments

Walked transects A, B, C, D, E & F - cover okay in all areas. No obvious signs of noxious weeds. Settlement plates all okay. Exterior of all manholes inspected - all okay. Interiors of manholes 1 & 3 and MH1 and MH2 inspected - All okay.

Signature Jerry Mathis  
Monticello LM Representative

Date 8/9/12

<sup>a</sup>Inspections required following a significant storm event

<sup>b</sup>Open to inspect quarterly

Figure 3-5. Example Repository Area Surveillance Checklist

## Repository Area Surveillance Checklist

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

NA Storm Event Triggered Surveillance due to NA 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	NO	Russian Olive Tree NW side of Repository
<b>Evidence of erosion of:</b>		
Top of disposal cell <sup>a</sup>	YES	
Disposal cell sideslopes <sup>a</sup>	YES	
Ditches	YES	
Surrounding area	YES	
<b>Evidence of:</b>		
Vandalism	YES	
Intrusion by livestock	YES	
Burrowing animal damage	YES	
Intrusion by humans	YES	
Accumulation of trash	YES	

### 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	NA	
Manholes <sup>b</sup>	NA	
Sediment Ponds	NA	
<b>Evidence of:</b>		
Structural Instability	NA	

### Additional Comments

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Signature David Dille  
 Monticello LM Representative

Date 9/12/12

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

Figure 3-5. Example Repository Area Surveillance Checklist

MONTHLY CLIMATOLOGICAL SUMMARY for JUL. 2012

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	77.4	90.2	4:30p	61.4	6:30a	0.2	12.6	0.00	6.4	34.0	4:00p	NNW
2	76.8	86.7	4:30p	64.5	7:00a	0.0	11.8	0.00	5.5	28.0	5:30p	NW
3	75.4	85.8	4:30p	66.0	6:30a	0.0	10.4	0.00	6.6	26.0	2:00p	N
4	72.3	83.9	4:30p	62.7	12:00m	0.1	7.4	0.03	6.3	24.0	9:30a	SSW
5	63.7	73.0	2:00p	57.4	6:30a	2.7	1.4	0.00	7.3	26.0	3:00a	SSW
6	66.7	79.1	5:30p	54.3	6:30a	2.1	3.8	0.00	5.2	22.0	11:30a	NW
7	67.9	78.9	4:00p	58.4	12:00m	1.1	4.0	0.00	5.0	20.0	7:30p	SSW
8	68.4	82.6	4:30p	58.4	12:30a	1.2	4.7	0.25	4.0	24.0	6:00p	SW
9	72.2	85.4	7:00p	56.2	5:00a	1.3	8.4	0.00	5.9	27.0	2:00p	SSW
10	73.1	86.6	5:00p	61.1	3:30a	0.2	8.3	0.00	7.6	22.0	1:00a	SSW
11	73.8	87.4	5:30p	61.5	6:00a	0.2	9.0	0.01	7.9	23.0	10:00a	S
12	74.2	86.7	6:00p	62.1	7:00a	0.1	9.3	0.00	5.9	27.0	12:00m	SW
13	72.9	85.2	2:30p	60.4	11:30p	0.6	8.6	0.07	6.8	31.0	12:30a	S
14	66.8	79.6	3:00p	59.3	7:00a	1.5	3.3	0.08	6.1	31.0	4:00p	SSW
15	63.6	75.7	1:30p	56.3	6:00a	2.8	1.4	0.06	8.1	37.0	3:30p	WSW
16	64.9	77.8	6:30p	56.3	3:30a	3.3	3.2	0.00	6.4	21.0	6:00p	S
17	69.7	81.8	6:00p	56.6	5:30a	1.8	6.5	0.00	5.5	23.0	10:00a	NNW
18	73.6	85.5	6:00p	61.6	4:30a	0.6	9.2	0.00	6.3	28.0	2:30p	WNW
19	72.7	87.4	4:00p	60.6	9:30p	0.6	8.2	0.13	7.1	32.0	10:30p	SSW
20	73.1	86.0	5:30p	58.7	5:00a	1.2	9.3	0.00	6.1	24.0	11:00p	NNW
21	74.3	87.7	5:00p	61.6	5:30a	0.3	9.6	0.00	5.8	25.0	1:00p	SSE
22	70.6	83.7	2:30p	60.4	6:30a	0.8	6.3	0.07	5.8	32.0	3:00p	NNW
23	71.6	84.3	3:00p	60.7	7:00a	0.7	7.3	0.00	5.1	26.0	7:00p	SSW
24	64.7	76.4	12:30p	59.1	6:30a	2.1	1.8	0.62	5.4	41.0	6:30p	SSE
25	69.5	82.1	5:30p	55.7	6:30a	2.3	6.8	0.00	5.7	34.0	5:30p	SSW
26	75.5	87.4	5:00p	61.6	4:30a	0.4	10.8	0.00	5.0	25.0	11:00p	NNW
27	69.8	83.6	3:00p	59.8	12:00m	0.6	5.4	0.02	8.1	27.0	1:30p	SSW
28	69.2	82.6	3:30p	59.3	1:00a	1.2	5.4	0.05	5.4	33.0	11:00p	N
29	67.8	76.2	1:00p	59.3	2:30a	1.1	3.9	0.00	6.5	35.0	12:00m	N
30	72.1	83.9	5:00p	61.3	4:30a	0.4	7.5	0.00	7.0	30.0	11:30p	N
31	70.3	84.2	2:00p	61.1	5:00a	0.4	5.7	0.02	7.4	38.0	7:30p	NNW
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	70.8	90.2	1	54.3	6	31.9	211.3	1.41	6.2	41.0	24	SSW

Max >= 90.0: 1  
 Max <= 32.0: 0  
 Min <= 32.0: 0  
 Min <= 0.0: 0

Max Rain: 0.62 ON 07/24/12

Days of Rain: 11 (>.01 in) 3 (>.1 in) 0 (>1 in)

Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for AUG. 2012

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	67.4	77.5	3:30p	58.3	4:30a	1.4	3.8	0.00	5.9	23.0	6:00p	WSW
2	69.8	81.4	4:30p	59.5	6:30a	0.7	5.5	0.00	5.4	23.0	11:30a	NW
3	69.5	82.8	1:30p	56.8	4:30a	1.2	5.7	0.05	5.8	23.0	2:30p	WSW
4	69.7	84.4	7:30p	53.7	6:30a	1.8	6.5	0.00	5.7	32.0	3:00p	SSW
5	70.0	83.1	3:30p	60.2	8:00p	0.8	5.9	0.13	7.5	23.0	10:30a	SW
6	69.4	81.8	4:30p	61.8	7:00a	0.4	4.7	0.00	7.2	30.0	6:30p	NNW
7	73.9	86.4	5:30p	60.1	5:00a	0.9	9.9	0.00	6.3	23.0	5:00p	NNW
8	76.3	87.6	4:30p	65.3	2:30a	0.0	11.3	0.00	5.8	27.0	2:30p	SSE
9	73.1	87.6	2:30p	62.1	12:00m	0.1	8.2	0.03	5.9	27.0	4:00p	SW
10	70.5	85.4	2:30p	59.8	6:00a	0.9	6.4	0.00	6.5	26.0	7:30p	NW
11	72.6	83.0	11:30a	61.3	7:00a	0.2	7.8	0.00	5.1	34.0	6:30p	NW
12	72.7	83.2	11:30a	62.5	7:00a	0.2	7.8	0.00	4.7	30.0	2:00p	NW
13	68.3	83.5	2:00p	60.5	10:30p	0.8	4.1	0.12	8.4	32.0	6:30p	SW
14	65.6	75.5	5:00p	59.1	6:30a	2.0	2.6	0.00	2.8	14.0	1:00a	NNE
15	71.0	83.7	4:30p	58.9	6:00a	1.3	7.4	0.00	5.3	21.0	2:00p	N
16	74.5	86.7	4:30p	62.2	5:00a	0.2	9.7	0.00	5.9	17.0	3:30p	NW
17	72.3	82.9	4:30p	64.8	7:30a	0.0	7.3	0.00	7.5	22.0	9:30a	SSW
18	72.4	85.7	4:00p	59.7	6:30a	0.7	8.2	0.00	5.0	25.0	4:00p	N
19	72.9	85.1	4:00p	58.3	5:30a	0.5	8.3	0.00	6.1	24.0	2:00p	NNW
20	70.9	80.7	5:00p	64.3	7:30a	0.0	6.0	0.00	5.1	23.0	12:30p	N
21	70.9	81.0	1:30p	58.9	7:00a	0.7	6.6	0.00	5.9	27.0	2:00p	NW
22	65.5	74.7	5:00p	58.7	12:00m	1.6	2.1	0.08	5.8	23.0	4:30p	S
23	57.6	59.7	1:00a	55.0	11:00p	7.4	0.0	1.45	2.0	10.0	2:00a	NNW
24	62.7	74.1	7:00p	54.7	5:00a	4.2	1.9	0.00	4.6	25.0	10:00p	NNW
25	68.4	79.9	5:00p	56.7	3:00a	2.0	5.4	0.00	6.3	24.0	11:30a	NNW
26	70.2	82.6	5:30p	57.6	6:30a	1.5	6.7	0.00	5.6	25.0	1:30p	NW
27	72.5	83.8	4:00p	63.1	7:00a	0.1	7.7	0.00	4.5	20.0	11:00a	WSW
28	73.4	84.5	4:00p	65.0	7:00a	0.0	8.4	0.00	5.1	23.0	1:30p	SSW
29	73.6	86.2	3:00p	61.2	7:00a	0.1	8.7	0.00	5.8	22.0	5:30p	NW
30	70.9	82.1	6:30p	61.1	7:00a	0.5	6.4	0.00	6.5	27.0	2:30p	WNW
31	70.1	81.2	4:00p	61.0	3:00a	0.8	5.9	0.00	6.1	23.0	4:30p	NW
<hr/>												
	70.3	87.6	8	53.7	4	33.0	196.9	1.86	5.7	34.0	11	NNW

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

Max Rain: 1.45 ON 08/23/12

Days of Rain: 6 (>.01 in) 3 (>.1 in) 1 (>1 in)

Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for SEP. 2012

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	66.2	79.0	1:30p	57.3	12:00m	2.8	4.0	0.06	6.5	33.0	6:30p	SSW
2	63.4	75.2	5:00p	53.6	3:30a	3.7	2.1	0.00	4.6	19.0	11:30a	NW
3	65.4	76.3	2:00p	53.5	4:30a	2.8	3.2	0.07	4.0	38.0	7:00p	NW
4	67.8	80.9	3:00p	55.1	3:30a	2.5	5.3	0.00	5.6	32.0	3:00p	WNW
5	69.4	81.3	3:30p	57.3	7:00a	1.5	5.9	0.00	5.3	20.0	3:30p	N
6	70.9	81.0	3:00p	57.7	6:00a	1.2	7.0	0.00	6.4	27.0	12:00m	W
7	67.6	77.5	4:00p	59.3	6:30a	1.1	3.7	0.00	11.1	32.0	12:30a	N
8	64.1	76.1	4:30p	53.7	7:00a	3.7	2.8	0.00	4.4	19.0	2:00p	N
9	65.0	76.1	4:30p	54.6	12:30a	3.1	3.0	0.00	6.2	20.0	9:30a	SSW
10	66.2	77.0	5:00p	57.3	2:00a	2.1	3.3	0.00	8.2	25.0	9:00a	SSW
11	59.0	70.3	2:30p	53.9	3:30a	6.5	0.6	0.12	5.4	25.0	3:30p	S
12	58.7	66.4	6:30p	53.5	4:00a	6.4	0.1	0.00	8.1	28.0	5:30p	N
13	61.1	72.3	4:00p	51.1	7:30a	5.5	1.6	0.00	6.8	19.0	5:00p	NNW
14	61.1	73.5	4:30p	51.2	7:00a	5.5	1.7	0.00	6.6	23.0	9:30a	S
15												
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-----												
	64.7	81.3	5	51.1	13	48.4	44.3	0.25	6.4	38.0	3	N

Max >= 90.0: 0  
 Max <= 32.0: 0  
 Min <= 32.0: 0  
 Min <= 0.0: 0  
 Max Rain: 0.12 ON 09/11/12  
 Days of Rain: 3 (>.01 in) 1 (>.1 in) 0 (>1 in)  
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

Monthly Pond 4 Surveillance Checklist

Level of Water in Pond 4 < 1.0 ft.

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>	<u>Rope is broke on several anchors so they are at bottom of pond. Wind blown anchors pushed back onto liner. Liner is secure even with missing anchors.</u>
Rescue equipment	<u>Yes</u>	
<b>Evidence of erosion of:</b>		
Top of Pond 4 berm	<u>Yes</u>	
Pond 4 sideslopes	<u>Yes</u>	
Ditches	<u>Yes</u>	
Surrounding area	<u>Yes</u>	
Seepage from Pond 4	<u>Yes</u>	
Overtopping of Pond 4	<u>Yes</u>	
<b>Evidence of:</b>		
Vandalism	<u>Yes</u>	
Intrusion by wildlife	<u>Yes</u>	
Intrusion by humans	<u>Yes</u>	
Accumulation of trash	<u>Yes</u>	

Additional Comments

Noxious weed present on berm. Canadian thistle.  
Ladder at N.E. corner is in the pond and very weathered.  
Red rope that was faded has been replaced and postings re-attached.

Monticello LM Representative Jerry Mattson Date 7/11/12  
Jerry Mattson

Figure 3-6. Example Checklist for Monthly Pond 4 Surveillance

### Monthly Pond 4 Surveillance Checklist

Level of Water in Pond 4 < 1.0 ft.

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>Yes</u>	_____
Pond 4 sideslopes	<u>Yes</u>	_____
Ditches	<u>Yes</u>	_____
Surrounding area	<u>Yes</u>	_____
Seepage from Pond 4	<u>Yes</u>	_____
Overtopping of Pond 4	<u>Yes</u>	_____
<b>Evidence of:</b>		
Vandalism	<u>Yes</u>	_____
Intrusion by wildlife	<u>Yes</u>	_____
Intrusion by humans	<u>Yes</u>	_____
Accumulation of trash	<u>Yes</u>	_____

**Additional Comments**

Evidence of Canadian Thistle and Tamarisk noted inside pond 4 fenced area.

\_\_\_\_\_

\_\_\_\_\_

Monticello LM Representative Jerry Mattson / J. Matt Date 8/8/12

Figure 3-6. Example Checklist for Monthly Pond 4 Surveillance

### Monthly Pond 4 Surveillance Checklist

Level of Water in Pond 4 ≈ 6" SW area 4" N.E. area.

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>	<u>Liner sand Bags are deteriorated. NO</u>
Rescue equipment	<u>yes</u>	<u>concern as bottom appears stable.</u>
<b>Evidence of erosion of:</b>		
Top of Pond 4 berm	<u>yes</u>	_____
Pond 4 sideslopes	<u>yes</u>	_____
Ditches	<u>yes</u>	_____
Surrounding area	<u>yes</u>	_____
Seepage from Pond 4	<u>yes</u>	_____
Overtopping of Pond 4	<u>yes</u>	_____
<b>Evidence of:</b>		
Vandalism	<u>yes</u>	_____
Intrusion by wildlife	<u>yes</u>	_____
Intrusion by humans	<u>yes</u>	_____
Accumulation of trash	<u>yes</u>	_____

**Additional Comments**

Tamarisk and sun flowers are on the bottom of the pond. The suspect Canada Thistle was examined from the top of the berm. It is not Canada Thistle. The examiner called the plant "Platt." It is acceptable to be on the site.

Monticello LM Representative Fred Smith Date 9-12-12

Figure 3-6. Example Checklist for Monthly Pond 4 Surveillance

**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.)?

Yes (4 yd<sup>3</sup>) 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: RADIOLOGICAL SURVEY PERFORMED ON 8/9/12  
BY J MATTSON.

David Dille  
Signature of Monticello LM Representative

9/19/12  
Date of Inspection

*Figure 3-8. TSF Record Book Inspection Report*