

**Monticello, Utah, National
Priorities List Sites
Federal Facility Agreement (FFA)
Quarterly Report:
April 1–June 30, 2013**

July 2013



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Federal Facility Agreement (FFA) Quarterly Report:
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Abbreviations

DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
gpm	gallons per minute
ICs	institutional controls
LCRS	Leachate Collection and Removal System
LDS	Leak Detection System
LM	Office of Legacy Management
LMS	Legacy Management Support
LTS&M Plan	<i>Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites</i>
MMTS	Monticello Mill Tailings Site
MVP	Monticello Vicinity Properties
NPL	National Priorities List
OU	Operable Unit
TSF	Temporary Storage Facility
UDEQ	Utah Department of Environmental Quality
UDOT	Utah Department of Transportation

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 April through June 2013. The U.S. Department of Energy (DOE) Office of Legacy Management (LM) assesses the status of the sites primarily through monthly and quarterly inspections performed by onsite Legacy Management Support (LMS) contractor staff in accordance with the *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (LTS&M Plan). Findings for the current reporting period indicate no anomalous conditions with respect to radiological contaminant control, compliance with institutional controls (ICs), action levels associated with the management of the disposal cell, and operation of the groundwater remediation system.

The Federal Facility Agreement (FFA) 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 MVP and MMTS were placed on the EPA National Priorities List (NPL) in 1986 and 1989, respectively. 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.

MVP and MMTS remedial actions were completed by September 1999, except for the remediation of contaminated groundwater and surface water of Operable Unit (OU) III of the MMTS. OU III remedial actions are ongoing. As of December 2003, LM administers the MVP and MMTS as the Monticello Disposal and Processing Site.

In addition to monthly and quarterly inspections, the status of the MVP and MMTS is evaluated in annual site inspections. The most recent annual inspection was conducted on September 25–26, 2012. The 2012 Annual Inspection Report was submitted to EPA and UDEQ on December 13, 2012. The status of the MVP and MMTS was also addressed in the most recent FFA semi-annual meeting, held via conference call on March 19, 2013.

2.0 MMTS Status

2.1 Operable Unit I

OU I of the MMTS consists of the onsite waste disposal cell and supporting infrastructure (collectively referred to as the repository) and the property comprising the former Monticello uranium- and vanadium-ore processing mill (mill site). The repository includes the disposal cell and disposal cell leachate management system, the LM field office, and a facility for interim storage of radiologically contaminated material encountered in city street and utility excavations. The disposal cell contains radioactively contaminated soil, sediment, and debris removed from the former mill site and surrounding private and municipal properties in Monticello.

2.1.1 Monticello LM Repository (DOE-Owned)

The repository is monitored and maintained by onsite LMS staff. As directed by Section 3.2 of the LTS&M Plan, monthly and quarterly inspections of the repository are conducted to ensure that remedy controls remain intact and that the waste remains isolated from the environment.

Inspection findings for the reporting period, with reference to the applicable section of the LTS&M 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. The Repository Area Surveillance Checklists for this quarter are included in Appendix A. The integrity of the repository remains uncompromised.
- Meteorological monitoring and storm events (Sections 3.2.2.2, 3.2.2.3, and 4.3.1): Significant storm events initiate radiological monitoring to ensure that contaminated soil has not been transported from supplemental standards areas. There were no storm events that required nonroutine surveillance of affected properties (those designated as supplemental standards cleanup properties) during this quarter. The onsite meteorological station was operable during the entire quarter. Climatological summaries are included in Appendix B.
- Pond 4 surveillance (Section 3.2.3): Monthly inspections identified no anomalous conditions at Pond 4, which receives leachate from the disposal cell for subsequent treatment by evaporation. The capacity of Pond 4 greatly exceeds the quantity of leachate production. The Monthly Pond 4 Surveillance Checklists for this quarter are included in Appendix A.

A comprehensive, visual inspection was performed of the primary liner from within Pond 4 on June 17, 2013. Several conditions were identified that will be corrected, including (1) some larger rock (small cobbles) present in the soil/rock matrix along the top berm of the pond has fallen into the pond, causing mostly minor damage to the liner on the lower portions of the side slopes; (2) the current condition of the liner ballast system can possibly damage the liner; (3) rocks and windblown trash have accumulated in the bottom of the pond. To eliminate the potential for further damage, larger diameter rocks will be removed from the top berm immediately adjacent to the pond's side slope crests, and the ballasts, which are no longer needed, will be removed, along with the rocks and trash. Identified holes will be repaired. Radiologically contaminated waste generated by these activities will be managed in the site's Temporary Storage Facility (TSF) until it is transferred by DOE to the LM Grand Junction, Colorado, Disposal Site for permanent disposal.

- Disposal cell and Pond 4 Leachate Collection and Removal System (LCRS) and Leak Detection System (LDS) operation (Section 3.3):
 - The disposal cell leachate collection in the upper sumps (i.e., the LCRS) operated normally this quarter.
 - The disposal cell 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 LCRS 2. A graph showing the performance history for the repository LCRS is included in Appendix C.
 - No leachate was collected in the Pond 4 LCRS during the quarter, which is the normal condition. A graph showing the performance history for the Pond 4 LCRS is included in Appendix C.

- Disposal cell and Pond 4 leachate collection in the lower sumps (LDS) remains at zero gallons per week. Graphs showing the performance history for the repository and Pond 4 are included in Appendix C.
- All disposal cell and Pond 4 leachate management equipment (pumps, pump controls, monitoring devices, and data transmission devices) are functional.
- Action levels in Appendix C graphs and associated response actions are described in Section 3.3 of the LTS&M Plan.
- TSF operation and maintenance (Section 3.4):
 - The quarterly inspection identified no anomalous conditions at the TSF. The inventory of contaminated soil material in the TSF is approximately 4 cubic yards. Additionally, waste generated from the LCRS vault 1 pump replacement activities in March 2013 (e.g., inoperable pump, piping, ropes, personal protective equipment, and other associated debris) was placed into the clamshell storage unit within the TSF in February. Waste was also placed into storage in the clamshell in March; this waste was associated with the pumping of some accumulated water at the bottom of LCRS vault 2 into Pond 4. The TSF Record Book Inspection Report for this quarter is included in Appendix A. In accordance with Section 3.4 of the LTS&M Plan, DOE will transfer material from the TSF to the LM Grand Junction, Colorado, Disposal Site 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 the disposal site occurred in June 2010 and was documented in the FFA quarterly report for July 1 through September 2010.

2.1.2 Former Mill Site (City-Owned)

Surveillance of the former mill site is conducted to ensure compliance with ICs implemented to preserve the OU I remedy for soil and groundwater. Findings for this quarter, with reference to the applicable section of the LTS&M Plan, are:

- Routine surveillance of the former mill site (Section 4.2.2): No evidence of nonconformance with groundwater-use restrictions (no installation of domestic-use wells in the alluvial aquifer) or land-use restrictions (no construction of habitable structures, no camping, and land-use preservation as a public park) was observed.

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

Surveillance of the Peripheral Properties is conducted to ensure compliance with ICs implemented to preserve the OU II remedy for soil and groundwater. Findings for this quarter, with reference to the applicable section of the LTS&M Plan, are:

- Routine surveillance of the Montezuma Creek Restrictive Easement Area (privately-owned properties within the floodplain of Montezuma Creek; Section 4.2.6): No evidence of nonconformance with land-use restrictions (no soil removal or construction of habitable structures in supplemental standards areas) or groundwater-use restrictions (no installation of domestic-use wells in the alluvial aquifer) was observed.

- Routine surveillance of supplemental standards property MS-00211-VL (City-owned; Section 4.2.5): No evidence of nonconformance with the land use-restriction on building construction was observed.
- No evidence of nonconformance with land- and groundwater-use restrictions was noted on City-owned peripheral properties with supplemental standards areas (Section 4.1).

2.3 Operable Unit III (Contaminated Groundwater and Surface Water)

2.3.1 Groundwater Restricted Area

Surveillance of properties where residual groundwater contamination is present is conducted to ensure compliance with groundwater-use restrictions (i.e., ICs to prevent exposure to contaminated groundwater). The affected properties constitute the Monticello Groundwater Restricted Area, as defined by the State of Utah Division of Water Rights. Surveillance findings for this quarter, with reference to the applicable section of the LTS&M Plan, are:

- Routine surveillance of the Monticello Groundwater Restricted Area (Section 4.2.7 and Appendix I): No evidence of nonconformance with groundwater-use restrictions was observed (i.e., no installation of domestic-use wells in the alluvial aquifer).

2.3.2 Groundwater Remediation

In accordance with the contingency remedy implemented for OU III under the January 2009 Explanation of Significant Difference, 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. There is also an infiltration trench available for the discharge of limited volumes (2–3 gallons per minute [gpm]) of treated water.

OU III remedy performance (monitored natural attenuation with pump-and-treat enhancement) is evaluated and reported annually in the annual groundwater report (LTS&M Plan Section 5.4). The following summary describes the performance of the ex situ pump-and-treat system from April through June 2013.

- The system operated continuously during the quarter.
- No treated water was transferred to the infiltration trench during this quarter because initially, the outfall flow metering was not operational, and once operational, reduced aquifer yield, because of drought conditions, did not provide enough water to warrant initiating the use of the infiltration trench. The system did not experience any maintenance issue that would lead to an unplanned shut down.
- The treatment rate was decreased to approximately 5.5 gpm in mid-June because of the drought-limited aquifer year.
- Iron fouling of the outfall flow meter is an on-going maintenance issue for the treatment system.

- Flow metering confirmed that effluent discharge to Montezuma Creek did not exceed the allowed rate of 10 gpm.
- Monthly monitoring of the treatment effluent verified that iron concentrations and pH for the quarter were within discharge allowances. Monthly effluent monitoring results for the quarter and the discharge allowances are shown in Table 1.

Table 1. Treatment System Compliance Summary

Treatment System Effluent to Montezuma Creek	April 2013	May 2013	June 2013
pH ^a	7.22	7.2	7.06
Iron (total, milligrams per liter) ^b	13	14	15

^a pH discharge allowance range = 6.5–9.0 standard units

^b Iron discharge limit = 45.4 milligrams per liter at outfall to Montezuma Creek

- Approximately 1.1 million gallons of groundwater were treated during the quarter. The average monthly treatment rates are shown in Table 2. The effective average treatment rate for the quarter was 8.4 gpm. Reduced aquifer yield (drought-related) during the month of June has decreased the average treatment rate for the quarter.

Table 2. Treatment System Performance Summary

Treatment Parameter	April 2013	May 2013	June 2013^a
Gallons treated	376,600	453,900	275,300
Average treatment rate, gpm	9.3	9.0	6.8
Uranium influent, micrograms per liter	310	300	368
Uranium effluent, micrograms per liter	18.0	48.0	69.0
Uranium mass removed, pounds	0.92	0.95	0.69
Cumulative uranium mass removed, pounds	61.28	62.23	62.91
Cumulative volume treated, gallons	26,738,000	27,191,900	27,467,200

^a Data collection cut-off date is June 23, 2013.

- Approximately 2.6 pounds of uranium were removed from the aquifer during the quarter as a result of groundwater extraction and treatment. The monthly mass of uranium removed from the groundwater, during the quarter, is shown in Table 2.
- DOE exchanges the reactive media when effluent concentrations of uranium exceed 150 micrograms/liter (or about one-half of the influent concentration) and the flow rate has been reduced by 40 percent of the discharge allowance to increase residence time in the treatment vessels. The reactive media was last exchanged on November 5 and 6, 2012. The previous exchange occurred in October 2011. Each treatment cell treated approximately 2.3 million gallons between these media exchanges. This treatment capacity is consistent with that of previous media exchanges, suggesting that media exchange will occur once per year under current operating conditions.

3.0 MVP Status

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

Surveillance findings for this quarter, with reference to the applicable section of the LTS&M Plan, include the following:

- Routine radiological surveillance of city street and utility corridors and UDOT rights-of-way (supplemental standards properties; Section 4.2.3):
 - Onsite LMS staff continued to coordinate with the City of Monticello (daily briefings), UDOT, and utility company officials regarding radiological control at roadway and utility excavations.
- Upgrades to city and state subsurface utility infrastructure occurred during the reporting period. No radiologically contaminated material was encountered at the excavations during this quarter. No erosion or unauthorized excavations occurred on the Highway 191 embankment at Montezuma Creek. Routine surveillance of supplemental standards property MS-00176-VL (Section 4.2.4) identified no excessive erosion or violation of the land-use restriction institutional control.

4.0 Schedule

Table 3 summarizes the schedule of recently completed and pending near-term activities and DOE reporting requirements for the Monticello NPL sites.

Table 3. Schedule of Recently Completed and Near-Term Activities and DOE Deliverables

Activity/DOE Deliverable	Schedule
Recently Completed:	
DOE submittal of FFA quarterly report: January–March 2013, to EPA and UDEQ.	Completed April 9, 2013.
DOE conducts spring 2012 OU III water quality and hydrologic monitoring.	Completed week of April 22, 2013.
DOE conducts monthly monitoring of ex situ groundwater treatment system.	Completed for April, May, and June 2013.
DOE posted past FFA quarterly reports (June 2004 through present) to the DOE public webpage for the site, per EPA request.	Completed May 3, 2013.
DOE, EPA, and UDEQ convened a follow-up spring 2013 FFA meeting to discuss OU III remedy optimization options.	Completed; meeting conducted via conference call on June 6, 2013.
Near-Term:	
DOE submittal of FFA quarterly report: April–June 2013, to EPA and UDEQ.	DOE to submit by July 10, 2013.
DOE, EPA, and UDEQ have agreed to conduct monthly meetings to discuss OU III contingency remedy optimization (option selection, approach, schedules, and progress).	Monthly dates to be determined beginning in July 2013 through project completion, or until it is determined that monthly meetings are no longer needed.
Conduct monthly monitoring of ex situ groundwater treatment system.	Next monitoring scheduled for week of July 8, 2013.
DOE submittal of the draft final Site Management Plan, Section 5, Annual Update (penalty milestone).	August 1, 2013.
DOE submittal of OU III annual water quality report.	Submit report to EPA and UDEQ in September or October 2013.
2013 annual site inspection.	September 9 through 11, 2013.
Fall 2013 FFA meeting.	Conference call on September 12, 2013, 8:00 a.m. to 12:00 p.m.

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Appendix A

Monthly and Quarterly Surveillance Checklists

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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
Condition of:		
Fences and gates	y	
Roads ^a	y	
Signs	y	
Site monuments	y	
Drainage ditches ^a	y	
Manholes	y	
Vegetation	y	
Evidence of erosion of:		
Top of disposal cell ^b	y	
Disposal cell sideslopes ^a	y	
Ditches	y	
Surrounding area	y	
Evidence of:		
Vandalism	y	
Intrusion by livestock	y	
Burrowing animal damage	y	prairie dog colony still on east side of site.
Intrusion by humans	y	
Accumulation of trash	y	

Additional Quarterly Surveillance Requirements

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

Condition of:		
Settlement plate structures		
Manholes ^b		
Sediment Ponds		
Evidence of:		
Structural Instability		
Additional Comments		

Signature: *Frank Smith* Date: 4-26-13

Monticello LM Representative

^aInspections required following a significant storm event

^bOpen to inspect quarterly

Figure 3-5. Example Repository Area Surveillance Checklist

Repository Area Surveillance Checklist

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

N/A Storm Event Triggered Surveillance due to ___ inches of rainfall over the past 24 hours.

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
Condition of:		
Fences and gates	<u>yes</u>	1. <u>Minor repairs needed on exterior fence.</u> <u>Very minor repairs.</u>
Roads ^a	<u>yes</u>	
Signs	<u>yes</u>	2. <u>We replaced 2 more signs on outside</u> <u>fence of Pond 4.</u>
Site monuments	<u>yes</u>	
Drainage ditches ^a	<u>yes</u>	
Manholes	<u>yes</u>	
Vegetation	<u>yes</u>	<u>Looks good out there.</u>
Evidence of erosion of:		
Top of disposal cell ^a	<u>yes</u>	
Disposal cell sideslopes ^a	<u>yes</u>	
Ditches	<u>yes</u>	3. <u>We removed 2 Trees From drainages</u> <u>this quarter.</u>
Surrounding area	<u>yes</u>	
Evidence of:		
Vandalism	<u>yes</u>	
Intrusion by livestock	<u>yes</u>	
Burrowing animal damage	<u>yes</u>	4. <u>Minor on top of cell. same as when</u> <u>annual inspection occurred.</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.

Condition of:		
Settlement plate structures	<u>yes</u>	
Manholes ^b	<u>yes</u>	
Sediment Ponds	<u>yes</u>	
Evidence of:		
Structural Instability	<u>yes</u>	
Additional Comments		
<u>site looks good.</u>		

Signature *Frank Smith* Date 5-29-13
 Monticello LM Representative

^aInspections required following a significant storm event
^bOpen to inspect quarterly

Figure 3-5. Example Repository Area Surveillance Checklist

Repository Area Surveillance Checklist

Monthly Surveillance N/A Quarterly Surveillance (Feb., May, Aug., Nov.)

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

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
Condition of:		
Fences and gates	<u>yes</u>	
Roads ^a	<u>yes</u>	
Signs	<u>yes</u>	<u>Faded but legible</u>
Site monuments	<u>yes</u>	
Drainage ditches ^a	<u>yes</u>	
Manholes	<u>yes</u>	<u>signs faded but legible</u>
Vegetation	<u>yes</u>	
Evidence of erosion of:		
Top of disposal cell ^a	<u>yes</u>	
Disposal cell sideslopes ^a	<u>yes</u>	
Ditches	<u>yes</u>	
Surrounding area	<u>yes</u>	
Evidence of:		
Vandalism	<u>yes</u>	
Intrusion by livestock	<u>yes</u>	
Burrowing animal damage	<u>yes</u>	<u>traicic dogs on east side at Harminwalds</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.

Condition of:

Settlement plate structures	_____	_____
Manholes ^b	_____	_____
Sediment Ponds	_____	_____

Evidence of:

Structural Instability	_____	_____
------------------------	-------	-------

Additional Comments

The eagle hawk perch on the n.w. side of the disposal cell has had a metal brace fall down. The perch is NOT causing any dangers.

Signature [Signature]

Monticello LM Representative

Date 6-26-13

^aInspections required following a significant storm event

^bOpen to inspect quarterly

Figure 3-5. Example Repository Area Surveillance Checklist

Monthly Pond 4 Surveillance Checklist

Level of Water in Pond 4 ± 12-inches at east-end.

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
Condition of:		
Fences, gates, and locks	<u>Y</u>	_____
Roads	<u>Y</u>	_____
Signs	<u>Y</u>	<u>Replaced 3 signs this month. Rest are good.</u>
Visible piping	<u>Y</u>	_____
Visible liner and anchors	<u>Y</u>	_____
Rescue equipment	<u>Y</u>	_____
Evidence of erosion of:		
Top of Pond 4 berm	<u>Y</u>	_____
Pond 4 sideslopes	<u>Y</u>	_____
Ditches	<u>Y</u>	_____
Surrounding area	<u>Y</u>	_____
Seepage from Pond 4	<u>Y</u>	_____
Overtopping of Pond 4	<u>Y</u>	_____
Evidence of:		
Vandalism	<u>Y</u>	_____
Intrusion by wildlife	<u>Y</u>	_____
Intrusion by humans	<u>Y</u>	_____
Accumulation of trash	<u>Y</u>	_____
Additional Comments		
<u>The electrical will be evaluated in the near future.</u>		

Monticello LM Representative Paul Smith Date 4-26-13

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

Monthly Pond 4 Surveillance Checklist

Level of Water in Pond 4 Approx - 6" NE

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
Condition of:		
Fences, gates, and locks	<u>YES</u>	
Roads	<u>YES</u>	
Signs	<u>YES</u>	<u>SIGNS ARE IN GOOD SHAPE</u>
Visible piping	<u>YES</u>	
Visible liner and anchors	<u>YES</u>	
Rescue equipment	<u>YES</u>	<u>ALL RESCUE EQUIP IN PLACE INC. ROPE LADDER</u>
Evidence of erosion of:		
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>	
Evidence of:		
Vandalism	<u>YES</u>	
Intrusion by wildlife	<u>YES</u>	
Intrusion by humans	<u>YES</u>	
Accumulation of trash	<u>YES</u>	
Additional Comments		
<u>SALT CEDAR HAS BEEN UPROOTED FROM SEDIMENT BUILD-UP</u>		
<u>IN BOTTOM OF POND. - RESPONSE TO ANNUAL INSPECTION</u>		
<u>FINDING.</u>		
Monticello LM Representative	<u>David Dille</u>	Date <u>5/29/13</u>

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

Monthly Pond 4 Surveillance Checklist

Level of Water in Pond 4 4.2" at N.E. corner.

Inspection Item	Acceptable (Yes/No)	Comments & Recommendation
Condition of:		
Fences, gates, and locks	<u>yes</u>	
Roads	<u>yes</u>	
Signs	<u>yes</u>	<u>Faded but legible.</u>
Visible piping	<u>yes</u>	<u>needs Bands on liner Boots.</u>
Visible liner and anchors	<u>yes</u>	<u>except as noted by Simbeck & Ass. Inc.</u>
Rescue equipment	<u>yes</u>	
Evidence of erosion of:		
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>	
Evidence of:		
Vandalism	<u>yes</u>	
Intrusion by wildlife	<u>yes</u>	<u>Noted More Burrowing animal signs on</u>
Intrusion by humans	<u>yes</u>	<u>the South Berm. could become</u>
Accumulation of trash	<u>yes</u>	<u>a problem.</u>
Additional Comments		
<u>As stated above the Burrowing animals are creating holes on</u>		
<u>the top of the berm.</u>		

Monticello LM Representative Fred Smith Date 6-26-13

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 *1 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 yd³ 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 *2 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: *1 - REPLACED TWO SIGNS ON THE TSF CYCLE

*2 - HERBICIDE SPRAYED ON TSF LOT ON 5/27/13

David Dille
Signature of Monticello LM Representative

5/29/13
Date of Inspection

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Appendix B
Climatological Summaries

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MONTHLY CLIMATOLOGICAL SUMMARY for APR. 2013

NAME: UT Monticello CITY: STATE:
 ELEV: 7069 ft LAT: 37° 06' 00" N LONG: 109° 06' 00" W

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

DAY	MEAN		TIME	LOW	TIME	HEAT	COOL	RAIN	AVG		TIME	DOM
	TEMP	HIGH				DEG	DEG		WIND	HIGH		
1	48.6	59.4	3:30p	38.0	6:00a	16.4	0.0	0.00	7.9	30.0	2:00p	WSW
2	38.0	49.3	11:30a	28.8	6:30a	27.0	0.0	0.04	6.7	25.0	12:30p	WNW
3	44.9	56.6	5:00p	35.8	4:30a	20.1	0.0	0.00	11.1	25.0	5:30a	NNW
4	50.8	62.5	4:30p	39.5	6:30a	14.3	0.0	0.00	7.4	24.0	12:30p	W
5	51.9	63.3	4:30p	44.2	6:00a	13.1	0.0	0.00	8.3	30.0	3:00p	SW
6	51.2	61.6	2:00p	40.9	2:30a	13.8	0.0	0.00	8.9	31.0	8:30p	NNW
7	50.6	61.9	2:30p	38.0	6:00a	14.4	0.0	0.00	6.9	27.0	1:00p	NW
8	41.8	53.0	1:00p	31.6	11:00p	23.2	0.0	0.19	12.4	49.0	1:30p	S
9	31.0	37.4	1:00p	22.2	12:00m	34.0	0.0	0.05	15.4	39.0	3:30p	NNW
10	27.9	38.7	4:30p	16.4	7:30a	37.1	0.0	0.00	18.1	39.0	3:00p	NNW
11	36.8	48.9	6:00p	25.6	3:30a	28.2	0.0	0.02	5.0	26.0	3:30p	NNE
12	44.5	56.1	5:00p	34.1	7:00a	20.5	0.0	0.00	5.9	18.0	12:30p	W
13	50.8	59.8	3:30p	37.1	2:30a	14.2	0.0	0.00	13.6	46.0	12:00m	SW
14	46.4	56.3	3:30p	36.4	8:00a	18.6	0.0	0.00	10.5	33.0	5:00a	N
15	46.1	58.6	3:00p	35.3	11:00p	18.9	0.0	0.00	9.0	32.0	12:00p	SSW
16	46.2	56.4	2:30p	34.3	12:00m	18.8	0.0	0.00	17.3	42.0	11:00a	SSW
17	27.8	35.7	1:00a	22.9	12:00m	37.2	0.0	0.01	12.1	33.0	4:00p	N
18	27.1	35.2	4:30p	20.4	5:00a	37.9	0.0	0.00	12.9	34.0	4:00p	NNW
19	37.4	51.0	4:30p	22.2	3:30a	27.6	0.0	0.00	3.7	19.0	1:30p	NW
20	41.5	50.7	5:00p	32.8	5:30a	23.5	0.0	0.00	8.1	33.0	2:00p	NNW
21	47.2	61.0	6:00p	33.4	6:00a	17.8	0.0	0.00	6.3	21.0	3:30p	NW
22	53.9	65.5	3:30p	41.7	6:00a	11.2	0.0	0.00	10.2	37.0	4:00p	NNW
23	38.2	45.7	5:30p	31.2	11:00p	26.8	0.0	0.00	14.1	35.0	2:30a	N
24	41.7	53.5	3:00p	27.0	5:00a	23.3	0.0	0.00	5.1	21.0	3:30p	W
25	49.7	61.9	1:30p	35.6	6:30a	15.4	0.0	0.00	6.6	27.0	3:00p	WNW
26	51.5	62.3	3:30p	37.5	7:00a	13.5	0.0	0.00	7.1	24.0	3:30p	NW
27	54.7	65.6	3:30p	42.5	5:30a	10.3	0.0	0.00	8.4	30.0	1:00p	NNE
28	58.5	70.7	5:00p	46.0	6:00a	7.6	1.1	0.00	7.8	26.0	6:00p	NNE
29	62.4	74.0	5:00p	48.2	6:00a	4.8	2.1	0.00	8.7	29.0	12:00p	W
30	65.5	73.3	3:00p	55.1	12:00m	1.7	2.2	0.00	12.8	36.0	1:30p	W

	45.5	74.0	29	16.4	10	591.2	5.4	0.31	9.6	49.0	8	NNW

Max >= 90.0: 0
 Max <= 32.0: 0
 Min <= 32.0: 10
 Min <= 0.0: 0
 Max Rain: 0.19 ON 04/08/13
 Days of Rain: 4 (>.01 in) 1 (>.1 in) 0 (>1 in)
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for MAY, 2013

NAME: UT Monticello CITY: STATE:
 ELEV: 7069 ft LAT: 37° 06' 00" N LONG: 109° 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	44.1	55.1	12:30a	36.2	12:00m	20.9	0.0	0.00	15.7	42.0	3:00a	NNW
2	40.4	50.7	4:00p	29.3	6:30a	24.6	0.0	0.00	14.3	29.0	8:30a	NNW
3	49.0	62.6	5:30p	34.8	6:30a	16.0	0.0	0.00	6.0	21.0	3:30p	NNW
4	54.0	66.9	4:00p	38.4	6:30a	11.1	0.2	0.00	7.0	32.0	3:00p	W
5	55.2	64.7	2:30p	47.7	2:30a	9.8	0.0	0.00	8.2	33.0	1:00p	SSW
6	45.7	50.9	8:00a	40.7	11:30p	19.3	0.0	0.11	6.3	27.0	8:30a	SSW
7	46.4	56.8	4:00p	38.0	4:30a	18.6	0.0	0.00	5.9	24.0	3:00p	SW
8	43.5	52.2	4:00p	36.0	7:00a	21.5	0.0	0.10	5.3	19.0	6:00a	SSE
9	43.3	53.9	4:30p	38.9	12:30a	21.7	0.0	0.41	3.1	18.0	4:30p	W
10	49.8	62.9	4:00p	38.7	4:30a	15.2	0.0	0.01	6.8	32.0	4:00p	NNE
11	53.6	65.3	3:00p	40.9	4:00a	11.4	0.0	0.00	5.5	20.0	2:30p	W
12	58.9	71.6	5:30p	43.8	6:30a	7.5	1.3	0.00	5.0	22.0	2:30p	W
13	64.3	76.4	4:00p	52.2	7:00a	4.3	3.6	0.00	5.4	20.0	1:30p	W
14	65.7	77.5	2:30p	52.7	3:30a	2.6	3.4	0.00	6.2	24.0	11:00p	S
15	66.4	77.0	2:30p	55.8	7:00a	2.2	3.7	0.00	7.7	28.0	6:00p	SW
16	62.6	74.6	3:30p	48.4	6:30a	4.7	2.3	0.00	8.0	30.0	3:30p	SSW
17	59.1	69.6	4:00p	44.0	6:00a	6.5	0.6	0.00	8.6	29.0	3:30p	SW
18	53.5	61.4	11:00a	44.6	6:30a	11.5	0.0	0.02	6.9	34.0	11:30a	SW
19	51.1	60.7	3:00p	40.1	5:30a	13.9	0.0	0.00	10.2	28.0	2:30p	NNW
20	51.2	59.9	4:30p	43.0	6:30a	13.8	0.0	0.00	11.3	35.0	1:30p	NNW
21	54.6	67.4	6:00p	42.4	3:30a	10.4	0.1	0.00	4.6	24.0	4:30p	NNW
22	61.7	75.5	6:00p	44.0	6:30a	5.8	2.4	0.00	8.5	34.0	4:30p	SSW
23	63.2	75.6	5:00p	46.0	5:30a	4.6	2.9	0.00	13.2	41.0	1:30p	SSW
24	59.7	72.5	6:00p	43.5	4:00a	6.9	1.7	0.00	7.9	36.0	4:30p	SSW
25	61.7	75.7	4:00p	47.9	4:30a	5.9	2.5	0.00	10.5	31.0	1:00p	SSW
26	60.9	72.9	5:00p	47.2	6:30a	6.0	1.9	0.00	9.7	33.0	2:30p	SSW
27	61.1	71.5	4:30p	46.3	6:30a	5.5	1.6	0.00	7.6	27.0	12:00p	SSW
28	58.4	70.6	4:30p	44.6	12:00m	7.4	0.8	0.01	10.5	34.0	10:00p	SSW
29	51.8	63.5	5:00p	37.7	6:30a	13.2	0.0	0.00	8.1	30.0	5:00p	NNW
30	57.1	69.2	6:30p	44.3	6:30a	8.6	0.7	0.00	9.6	31.0	2:30p	NNW
31	56.9	67.2	5:00p	45.3	4:30a	8.3	0.2	0.00	11.8	50.0	4:30p	NNW

	55.0	77.5	14	29.3	2	339.7	29.9	0.66	8.2	50.0	31	SSW

Max >= 90.0: 0
 Max <= 32.0: 0
 Min <= 32.0: 1
 Min <= 0.0: 0
 Max Rain: 0.41 ON 05/09/13
 Days of Rain: 4 (>.01 in) 2 (>.1 in) 0 (>1 in)
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for JUN. 2013

NAME: UT Monticello CITY: STATE:
 ELEV: 7069 ft LAT: 37° 06' 00" N LONG: 109° 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	58.2	71.2	6:00p	45.5	6:00a	7.9	1.1	0.00	9.3	27.0	4:00a	NNE
2	65.0	79.8	5:00p	47.1	6:30a	4.5	4.6	0.00	7.7	26.0	4:30p	WNW
3	70.0	79.5	3:00p	59.9	6:00a	0.6	5.5	0.00	8.8	31.0	1:00p	W
4	69.5	82.0	4:30p	57.0	6:30a	1.5	6.0	0.00	6.5	37.0	4:30p	W
5	68.8	78.4	3:30p	56.3	6:00a	1.3	5.1	0.00	9.9	30.0	4:00p	NNW
6	68.7	80.4	3:30p	55.5	3:30a	2.1	5.7	0.00	8.4	25.0	7:00p	NNW
7	70.3	79.8	3:00p	57.1	6:30a	0.8	6.1	0.00	9.0	32.0	4:30p	NNW
8	73.1	84.7	4:30p	57.1	4:00a	1.0	9.1	0.00	10.2	34.0	4:00p	NNW
9	75.3	87.6	4:00p	61.0	5:30a	0.3	10.6	0.00	8.7	26.0	3:30p	NNW
10	76.1	88.3	5:00p	63.4	3:30a	0.0	11.1	0.00	8.9	34.0	4:00p	SW
11	71.5	82.0	5:00p	60.4	6:30a	0.6	7.1	0.00	10.1	33.0	1:00p	SW
12	73.2	85.2	4:00p	60.3	5:00a	0.5	8.6	0.00	8.0	30.0	5:00p	W
13	72.3	84.2	5:00p	59.4	6:00a	0.9	8.2	0.00	8.7	36.0	5:00p	SSW
14	70.7	81.8	4:00p	54.5	6:00a	1.3	7.0	0.00	6.4	27.0	1:00p	W
15	69.1	80.7	3:30p	57.7	5:30a	1.1	5.3	0.00	8.0	35.0	2:30p	SSW
16	69.7	81.0	5:30p	58.9	5:30a	1.3	6.0	0.00	9.6	28.0	2:30p	SSW
17	72.1	82.8	3:30p	60.8	6:00a	0.4	7.4	0.00	7.1	26.0	2:00p	W
18	69.8	81.6	5:00p	56.8	11:30p	1.3	6.2	0.00	8.6	34.0	3:00p	SSW
19	68.7	82.2	4:30p	53.5	6:00a	2.4	6.0	0.00	9.6	38.0	3:00p	SSW
20	68.5	81.4	5:00p	50.9	6:30a	2.4	5.8	0.00	8.9	33.0	2:00p	SSW
21	68.3	81.5	5:30p	52.1	6:00a	2.5	5.8	0.00	8.9	32.0	4:00p	SSW
22	68.0	80.2	4:00p	52.7	6:30a	2.2	5.3	0.00	8.1	26.0	2:30p	SW
23	69.3	80.7	5:00p	55.9	5:30a	1.4	5.7	0.00	8.1	27.0	4:30p	SSW
24	67.2	78.0	4:30p	54.2	6:30a	2.1	4.2	0.00	8.9	30.0	11:00a	SSW
25	68.7	80.4	4:30p	51.7	6:30a	2.1	5.8	0.00	7.1	31.0	2:00p	SW
26	61.3	66.6	8:00a	57.2	5:30a	1.3	0.0	0.00	1.9	10.0	1:00a	SW
27												
28												
29												
30												

	69.4	88.3	10	45.5	1	43.8	159.3	0.00	8.3	38.0	19	SSW

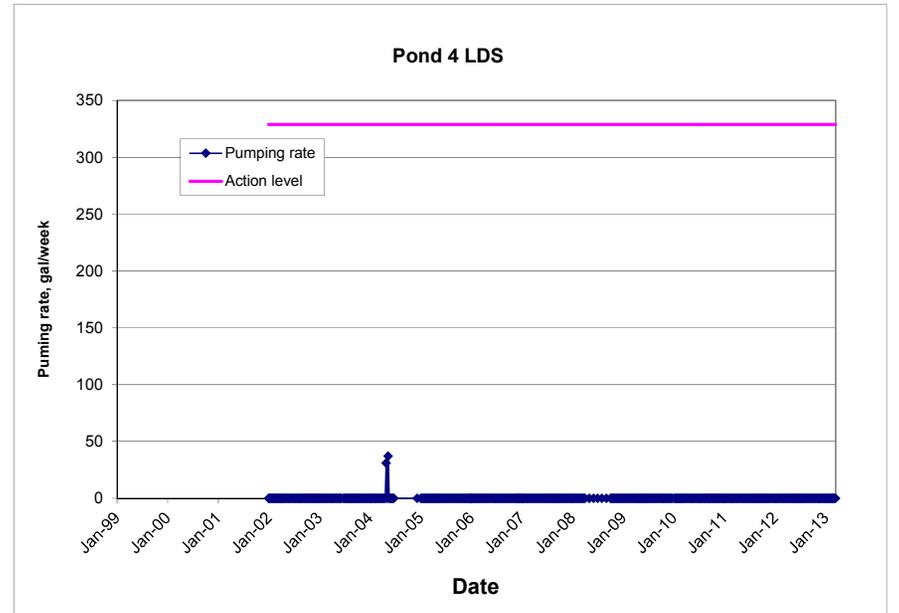
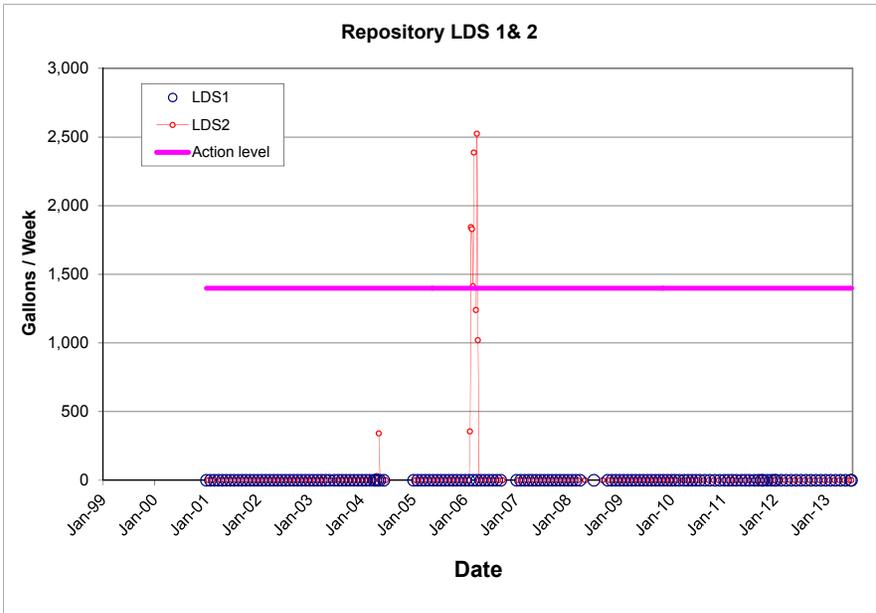
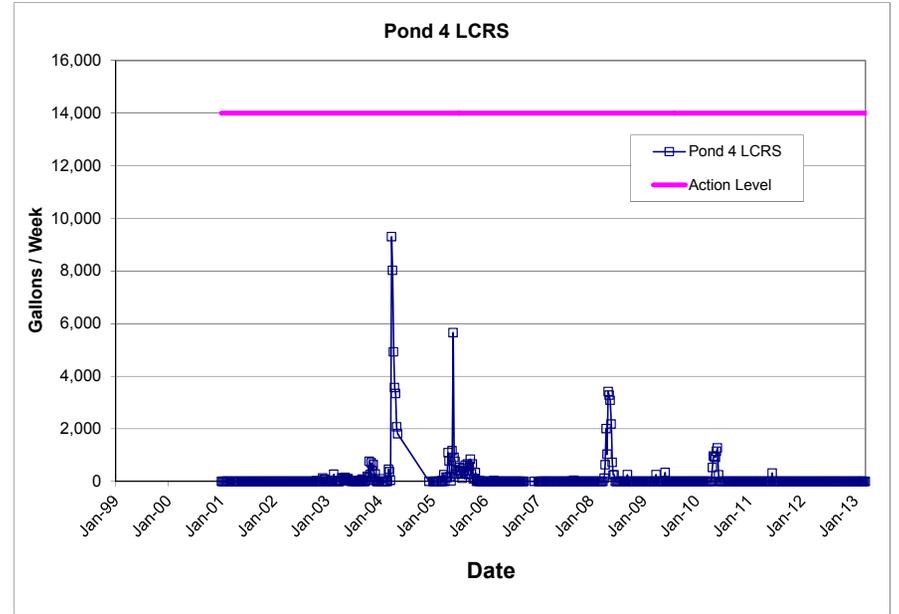
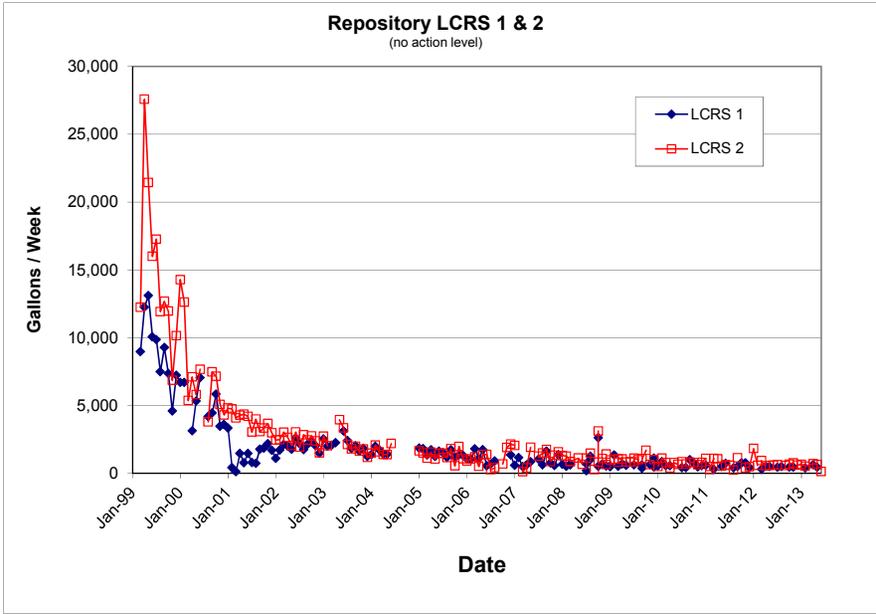
Max >= 90.0: 0
 Max <= 32.0: 0
 Min <= 32.0: 0
 Min <- 0.0: 0
 Max Rain: 0.00 ON 06/01/13
 Days of Rain: 0 (>.01 in) 0 (>.1 in) 0 (>1 in)
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

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Appendix C

Graphs Showing Performance History for Repository and Pond 4 Leachate Collection and Recovery System and Leak Detection System

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