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2006 Annual Operations Report for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action

February 2007

Idaho Cleanup Project

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2006 Annual Operations Report for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action

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ABSTRACT

This annual operations report describes the requirements followed and activities conducted to inspect, monitor, and maintain the items installed during performance of the Waste Area Group 3, Operable Unit 3-13, Group 1, Tank Farm Interim Action, at the Idaho Nuclear Technology and Engineering Center.

This report covers the time period from January 1 through December 31, 2006, and describes inspection and monitoring activities for the surface-sealed areas within the tank farm, concrete-lined ditches and culverts in and around the tank farm, the lift station, and the lined evaporation pond. These activities are intended to assure that the interim action is functioning adequately to meet the objectives stated in the Operable Unit 3-13, Record of Decision for the Group 1, Tank Farm Interim Action, (DOE/ID-10660) as described in the Group 1 Remedial Design/Remedial Action Work Plan (DOE/ID-10772).

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ACRONYMS

CMP	corrugated metal pipe
DOE-ID	Department of Energy Idaho Operations Office
HDPE	high-density polyethylene
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
O&M	operation and maintenance
OU	operable unit
RadCon	Radiological Control
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
TFIA	Tank Farm Interim Action
WAG	waste area group

2006 Annual Operations Report for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action

1. INTRODUCTION

The *Operation and Maintenance Plan for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action* (DOE-ID 2005)[a] contains an annual reporting requirement. This annual report for the Tank Farm Interim Action (TFIA) provides a summary of the monitoring data collected and maintenance activities performed for the time period from January 2006 through December 2006. Table 1-1 contains the Operations and Maintenance (O&M) Plan items listed for inclusion in the annual report along with the corresponding section in this annual report where they are addressed.

Table 1-1. Operations and Maintenance Plan items to be included in the annual report and corresponding annual report section.

Operations and Maintenance Plan Items	Annual Report Section
A summary of the inspections performed	4
A summary of pond sediment inspections	4.7
A summary of maintenance activities performed	4
Projected maintenance activities required for the next year	5
Evaporation pond monitoring data	4, Table 4-6

Inspection, monitoring, and maintenance activities for the TFIA components will continue under this Operable Unit (OU) 3-13, Group 1, plan until after the final remedy for tank farm soils is approved and the components are incorporated into the remedy via the new O&M plan. The OU 3-13 Record of Decision (ROD) (DOE ID 1999) deferred a final remedy for Group 1 to a separate ROD that is designated OU 3-14. Once the OU 3-14 ROD is approved, the OU 3-14 remedial design/remedial action work plan will be developed which will include its own O&M plan. Upon approval of this remedial design/remedial action work plan, the TFIA components will be transferred from OU 3-13, Group 1, to OU 3-14.

a. Revision 4 of the *Operation and Maintenance Plan for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action* was issued in November 2006 as guidance for calendar year 2007 and beyond.

2. BACKGROUND

The Idaho Nuclear Technology and Engineering Center (INTEC), formerly known as the Idaho Chemical Processing Plant, is located in the south-central area of the Idaho National Laboratory (INL) Site in southeastern Idaho (see Figure 2-1). From 1952 to 1992, operations at INTEC primarily involved reprocessing spent nuclear fuel from defense projects, which entailed extracting reusable uranium from the spent fuels. Liquid waste generated from the reprocessing activities, which ceased in 1992, is stored in an underground tank farm at INTEC. Both soil and groundwater contamination resulted from these previous operations. Under the Federal Facility Agreement and Consent Order (DOE-ID 1991), the Environmental Protection Agency, Idaho Department of Environmental Quality, and Department of Energy are directing cleanup activities to reduce human health and environmental risks to acceptable levels.

Several phases of investigation have been performed at the OUs within Waste Area Group (WAG) 3. A comprehensive remedial investigation/feasibility study (RI/FS) (DOE-ID 1997a, 1997b, 1998) was conducted for OU 3-13 to determine the nature and extent of contamination and corresponding potential risks to human health and the environment under various exposure pathways and scenarios. Based on the RI/FS results, INTEC release sites were further segregated into seven groups by contaminants of concern, accessibility, or geographic proximity to allow development and analysis of remedial action alternatives. The TFIA is part of Tank Farm Soils, which was designated as Group 1 within OU 3-13. The principal threats posed by the Group 1 soils are from direct radiation exposure to workers or the public and from potential leaching and transport of soil contaminants to perched water or the Snake River Plain Aquifer. (DOE-ID 1999)

To meet the intent of the TFIA in the OU 3-13 ROD as altered in the agreement to resolve dispute (DOE 2003), the following interim action activities have been completed for the Group 1 soils:

- Concrete-lined storm water collection ditches were installed around the tank farm.
- Selected culverts around the tank farm and out to the discharge point have been replaced with larger culverts to accommodate the expected increase in storm water flow.
- A lift station has been constructed at the intersection of Beech Street and Olive Avenue (CPP-1792) to pump storm water to a location where it will drain freely to the discharge point.
- Concrete headwalls and endwalls have been constructed as necessary throughout the lined drainage system.
- A double-lined evaporation pond with a leak detection system has been constructed to collect storm water run-off from the tank farm and other INTEC areas. The pond is located east of the INTEC security fence.
- A fence has been constructed around the evaporation pond.
- Site areas CPP-28, -31, and -79, located inside the tank farm, (see Figure 2-2) were covered with a surface-sealed asphalt infiltration barrier, and a surface water drainage system was installed to drain run-off toward the concrete-lined storm water collection ditches.
- Asphalt coverings have been installed over selected areas in the 150-ft control zone outside the tank farm (Figure 2-2).

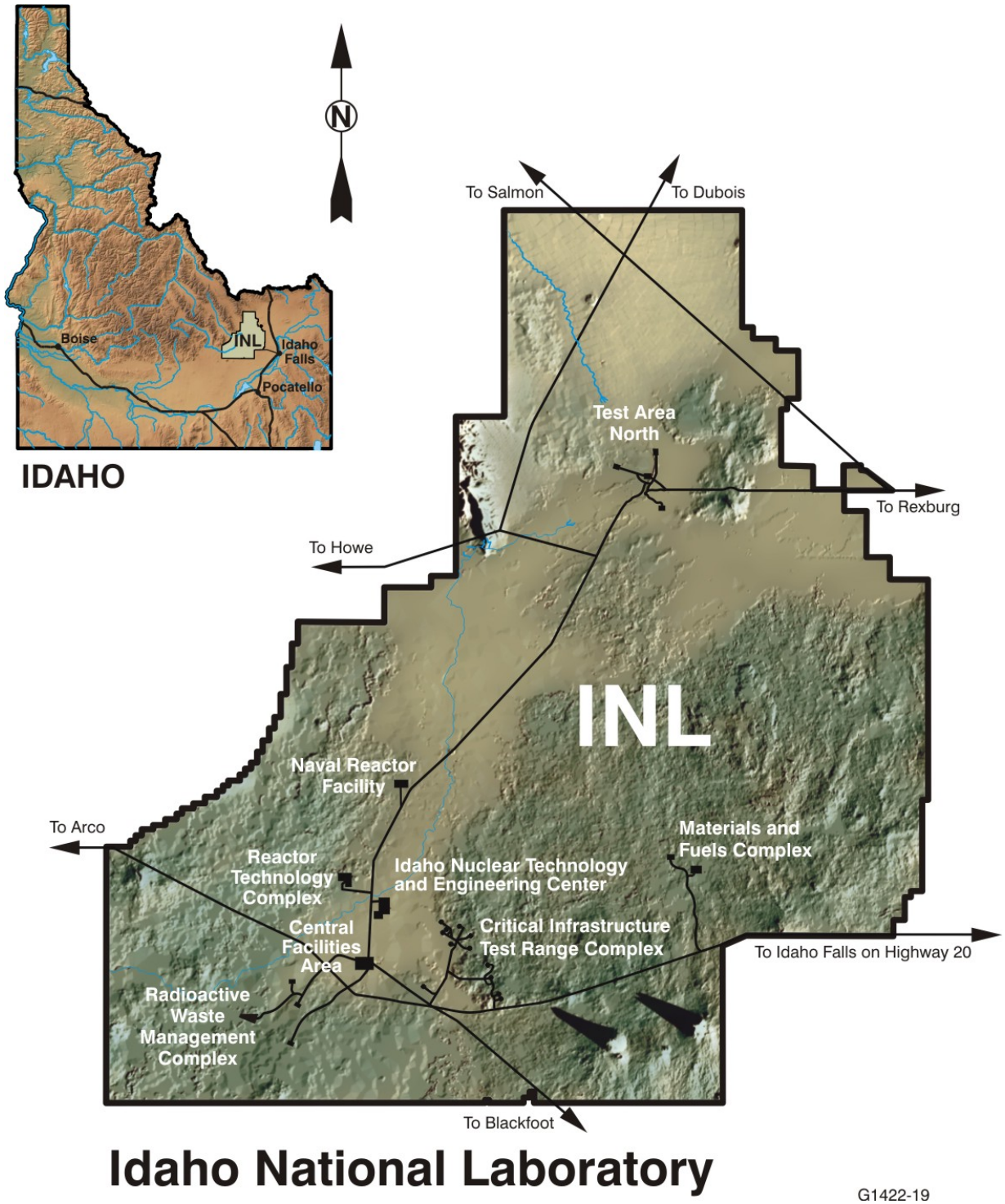

Figure 2-1. Location of INTEC at the INL Site.

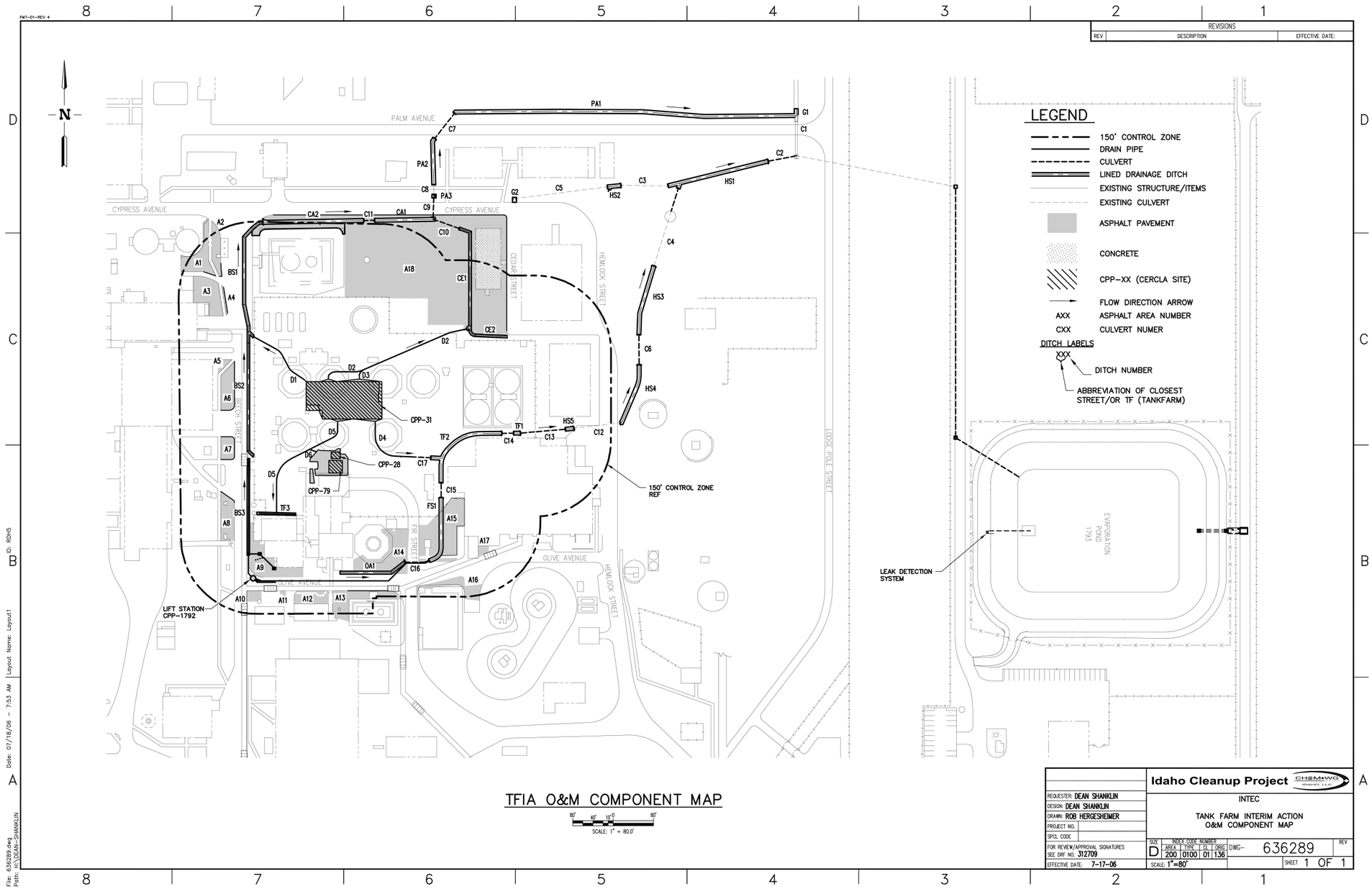

Figure 2-2. Tank Farm Interim Action components.

3. REQUIREMENTS FOR INSPECTIONS, RADIOLOGICAL SURVEYS, AND MAINTENANCE

Requirements for visual inspections, radiological surveys, and maintenance were obtained from Revision 3 of the O&M Plan (DOE-ID 2005) and INTEC Radiological Control (RadCon) requirements. Table 3-1 lists each TFIA component, inspection and survey requirements, and the frequency performed during the reporting period.

Reported items that required maintenance were addressed per the requirements stated in the O&M Plan. Items located outside the tank farm were repaired as part of a coordinated effort with INTEC facility maintenance activities and per the specification provided in the vendor data for the equipment. Items located within the tank farm were to be repaired expeditiously.

Table 3-1. Inspections, monitoring, radiological surveys, and maintenance requirements for the TFIA.

Component	Requirement	Frequency[a]
Tank farm surface-sealed areas	Inspect for cracks/potholes having potential to compromise infiltration barrier integrity. Drainage piping inspected for functionality.	Quarterly.
Control zone asphalt-paved areas	Inspect to ensure integrity, monitor radiological conditions, and verify drainage to the storm water collection system.	Quarterly.
Storm water collection system ditches and culverts	Inspect to ensure integrity of the system and to ensure drainage from the tank farm and other INTEC areas to the evaporation pond, and monitor for radiological conditions.	Quarterly
Olive Avenue lift station	Visual inspection of pumps, piping, slide rails, water level hatch doors, and control panel. Systems check on components.	Quarterly for visual inspections. Annually[b] and following maintenance activities for systems check.
Evaporation pond liner and perimeter	Inspect the evaporation pond liner and associated area to ensure that the liner is not leaking and that the pond is performing as designed.	Quarterly.
Evaporation pond leak detection system	Inspect the leak detection system to ensure it is functioning properly. Systems check on components.	Quarterly for inspections. Annually[b] and following maintenance activities for systems check.
Evaporation pond sediment inspections and removal	Inspect the pond inlet and outlet for sediment debris accumulation to ensure that flow is not impeded.	Quarterly.

a. The schedule for the TFIA inspections is coordinated to meet the guidance provided by "Frequencies of Inspections for Hazardous Waste Storage Areas" (EA-CER-001).

b. Inspections should have a minimum of 11 and a maximum of 13 months between consecutive inspections.

4. SUMMARY OF 2006 INSPECTIONS, MONITORING, SURVEYS, AND MAINTENANCE

Inspections of the TFIA components were performed quarterly from January 2006 through December 2006 on the dates shown in Table 4-1. The inspections performed were scheduled inspections. No contingency inspections were ordered by the Department of Energy Idaho Operations Office (DOE-ID).[b] All maintenance items in the following section, reported as completed, were done within the timeframes specified in the TFIA O&M Plan for listed areas/components (DOE-ID 2005).

Radiological control technicians routinely monitor the TFIA lined drainage ditches for radiological contamination or changes in conditions. This action is not a requirement of the TFIA O&M Plan, but changing conditions are documented on TFIA inspection forms and noted changes are addressed as necessary. TFIA lined ditches were monitored for radiological conditions in accordance with INL radiological monitoring and control policies, which incorporate the requirements of 10 CFR 835.401 and 10 CFR 835.1102. This monitoring was specified based on input by INL RadCon personnel who are required to monitor areas at INTEC to (a) document radiological conditions, (b) detect changes in radiological conditions, including the gradual buildup of radioactive material, (c) verify the effectiveness of engineering and process controls in containing radioactive material and reducing radiation exposure, (d) maintain appropriate controls and restrictions to prevent the inadvertent transfer of contamination to locations outside of radiological areas, and (e) identify and control potential sources of individual exposure to radiation and/or radioactive material.

Table 4-1. 2006 inspection dates.

Component	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
Tank farm surface-sealed area	March 22	June 8	August 29	December 4
Control zone asphalt-paved area	March 22	May 17	September 13	October 16
Water collection system ditches and culverts	March 22	May 17	September 13	October 16, November 1
Olive Avenue lift station	March 22	May 17	September 13	October 16
Evaporation pond liner and perimeter	March 22	May 17	September 13	October 16
Evaporation pond leak detection system	March 22	May 17	September 13	October 16, October 19

b. Contingency inspections are unscheduled, situation-unique inspections, ordered by DOE-ID when it has information that indicates the site integrity has been or may be threatened. Events that might trigger contingency inspections include severe rainstorms, floods, or highly unusual events such as tornadoes and earthquakes.

4.1 Tank Farm Surface-Sealed Areas

The tank farm surface-sealed areas consist of two asphalted areas: one area covers soil contamination site CPP-31 and the second area covers soil contamination sites CPP-28 and CPP-79 (see Figure 2-2). Each area uses asphalted curbing and drainage piping to collect and divert surface water run-off to the lined drainage ditches around the tank farm perimeter. Installation of the surface-sealed areas and drainage components was completed in September 2004 and inspected quarterly in 2006. The inspections entailed an examination of the surface-sealed areas to ensure they were free of cracks and potholes that would have the potential to compromise the integrity of the surface as an infiltration barrier. In addition, the associated drainage piping was inspected for functionality to ensure a seal between the asphalt area and the discharge pipe and no visible blockage of the discharge pipe. Filter socks located at the end of each drainpipe were inspected to verify they were in place and were not obstructed by debris. Issues noted during the inspections and actions taken are listed in Table 4-2.

Table 4-2. Summary of issues noted during tank farm surface-sealed areas inspections.

Reported Date	Item	Comments and Action Taken
3/22/06	Debris partially blocking CMP[a] inlet screens.	Work request initiated on 3/30/06 to clean debris from the screens. Maintenance work completed.
3/22/06	Filter sock on the northeast corner has separated from the HDPE.[b]	Work request initiated on 3/30/06 to reconnect filter sock. Maintenance work completed.
3/22/06	Small amount of gravel and debris accumulated in lined ditch TF2.	Work request initiated on 3/30/06 to clean gravel and debris from the lined ditch. Maintenance work completed.
6/8/06	Wooden pad in area CPP-79 has come loose.	Work request initiated on 6/14/06 to patch and reseal the asphalt. Maintenance work completed.
6/8/06	Ballast tube that holds down the flexible HDPE drainpipe in the northeast corner has developed a tear.	Work request initiated on 6/14/06 to have the ballast tube repaired. Maintenance work completed.
8/29/06	Culvert northwest of CPP-694 is partly blocked by weeds and debris.	Work request initiated on 8/30/06 to have the weeds and debris removed. Maintenance work completed.
8/29/06	Need six more ballast tubes to help keep the flexible HDPE in place during high winds.	Work request initiated on 8/30/06 to have six more ballast tubes placed over the flexible HDPE. Maintenance work completed.

a. CMP = corrugated metal pipe.
b. HDPE = high-density polyethylene.

4.2 Control Zone Asphalt-Paved Areas

The selected asphalted areas within the 150-ft control zone (Figure 2-2) were inspected as part of the lined drainage ditch and culvert inspection. These inspections were performed quarterly on the dates listed in Table 4-1. Inspections entailed a walkdown to evaluate the integrity of the areas by looking for potential defects, damage, or deficiencies. Table 4-3 lists the issues noted during the inspections and actions taken.

RadCon management has identified that these areas within the 150-ft control zone are deemed to be equivalent to all other paved areas within INTEC (outside the tank farm perimeter) and did not require a periodic radiological survey.

Table 4-3. Summary of issues noted during control zone asphalt-paved areas inspections.

Reported Date	Item	Comments and Action Taken
3/22/06	Asphalt over area east of CPP-630 has been removed and replaced with gravel due to subsurface utility repair activity.	Asphalt area added to the INTEC asphalt scope of work for FY[a] 2006. Asphalt replacement work completed.
3/22/06	Asphalt around the Olive Avenue hatch cover has not been reinstalled since hatch cover replacement.	Asphalt area added to the INTEC asphalt scope of work for FY 2006. Asphalt replacement work completed.
3/22/06	Asphalt northeast of CPP-1647 has been removed during installation of a new deionization system.	Asphalt area added to the INTEC asphalt scope of work for FY 2006. Asphalt replacement work completed.
8/20/06	Crack/separation has developed between the asphalt and concrete-lined ditch (OA1) along Olive Avenue.	Minor maintenance work order issued. Separation filled in using self-leveling Sikaflex®. Maintenance work completed.

a. FY = fiscal year.

4.3 Storm Water Collection System

The storm water collection system consists of all TFIA concrete-lined ditches and culverts as identified in Figure 2-2. The system was inspected quarterly during 2006 on the dates listed in Table 4-1. The inspection entailed walking along the entire system and visually inspecting these areas (see Figure 2-2) to ensure that (a) the ditches, culverts, and discharge areas were free of sediment and debris that could impede run-off to the evaporation pond and (b) the integrity of the concrete ditches, headwalls, and endwalls was not compromised by fully penetrating cracks. Table 4-4 lists the issues noted during the inspections and actions taken.

Radiological surveys were conducted each month to monitor for radiological conditions except when snow covered the lined ditches. In addition, the radiological surveys were not performed when wet conditions precluded performing an effective radiological survey.

Table 4-4. Summary of issues noted during storm water collection system inspections.

Reported Date	Item	Comments and Action Taken
3/22/06	Several ditches contain sand/gravel and debris and many culvert inlets are filled with debris.	Reoccurring preventative maintenance work order established to clean sand/gravel and debris from the ditches and culverts implemented. Maintenance work completed.
3/22/06	The surface of approximately 68 ft of concrete-lined ditch (BS1) along Beech Street (northwest of the tank farm) has spalled. Surface of the concrete is deteriorating.	Subcontract prepared and awarded to have five sections, totaling approximately 68 ft of concrete-lined ditch removed and replaced. Original design followed. Replacement work completed.
3/22/06	Headwall to culvert C10 (see Figure 2-2) damaged during the winter months by vehicle contact. Approximately one-half of the top has been broken off.	Subcontract prepared and awarded to have the headwall repaired. Reflective orange delineator posts attached to the repaired headwall to deter future damage by vehicles (see Appendix A for headwall repair design drawing). Repair work completed.
3/22/06	Extensive debris found in lined ditch FS1 near CPP-659.	Facility supervisor contacted and advised of the situation. Debris was removed. Maintenance work completed.
3/22/06	Expansion joint material in ditch BS1 has detached.	Expansion joint material replaced when spalled concrete was replaced. Maintenance work completed.
3/22/06	Area that contains lined drainage ditch HS5 posted as a Rad Caution Area.	Area resurveyed and restrictions lifted.
5/18/06	Spare pump for Olive Avenue lift station has not been obtained as required by the O&M Plan.	Spare pump ordered and received. Pump stored in warehouse CPP-654.
7/18/06	Headwall next to grated inlet (G1) is cracked.	Engineering evaluation performed. Crack is above water line and does not affect integrity. Condition to be monitored and repaired in 2007 as necessary.

Water was discharged to the storm water collection system as is allowed by the TFIA O&M Plan. Nonhazardous, nonradiologically regulated waters can be discharged into the storm water collection in lieu of being discharged to the ground and potentially contribute to the perched water in the proximity of the tank farm. Water sources must undergo a one-time sampling and analysis to confirm the absence of hazardous and/or radiological constituents. Table 4-5 lists the discharge events that occurred during 2006. Water from these sources have been discharged into the storm water collection system and have undergone previous sample collection and analysis and have been approved for discharge.

Table 4-5. List of water discharged into the TFIA storm water collection system during 2006.

Date	Source	Discharge Location	Estimated Quantity Discharged
4/22/06	NWCF[a] utility tunnel	Lined drainage ditch FS1 near CPP-659	2,460 gal
6/9/06	NWCF utility tunnel	Lined drainage ditch FS1 near CPP-659	2,100 gal
9/18/06	Fire water storage tank VES-UTI-111	Unlined drainage ditch north side of INTEC to TFIA grated inlet (G1)	30,000 gal
10/7/06–10/8/06	NWCF utility tunnel	Lined drainage ditch FS1 near CPP-659	1,200 gal
10/22/06	Fire water storage tank VES-UTI-112	Unlined drainage ditch north side of INTEC to TFIA grated inlet (G1)	30,000 gal

a. NWCF = New Waste Calcining Facility.

4.4 Olive Avenue Lift Station

The lift station is located in the intersection of Olive Avenue and Beech Street and is identified on Figure 2-2 as CPP-1792. The station is a 10-ft-diameter by 15.8-ft-deep concrete sump covered with a pair of metal hatch doors. Major components include two 5-hp submersible sewage pumps, a forced main from the sump to the ditch discharge point, and the system controls. The system was inspected routinely as part of completing a Utilities Outside Equipment Checks (Form INTEC-6998) and quarterly as part of the TFIA routine inspections. Quarterly inspections were performed on the dates listed in Table 4-1. Inspections entailed checking for high-water-level alarms, observing water level in the sump, and visually inspecting system components. During the year, one maintenance item was reported and is described below.

As required by the TFIA O&M Plan, a system check of the Olive Avenue Lift Station was performed on August 14, 2006. Results of the system check showed the system operated normally but at water levels that are slightly higher from the original design (e.g., initial pump starts at 7.5 ft instead of the 6-ft design level and the high-level indicator activated at 9.5 ft instead of the 8-ft design level). The difference between the actual activation levels and the design levels did not affect the operation of the system since the capacity of the lift station would allow the water level to exceed 14 ft without overflowing. However, the pump-on and high-level indicator levels are to be adjusted to the design levels in operational year 2007 as part of the next scheduled system check test (see Section 5).

4.5 Evaporation Pond Leak Detection System

Monitoring data were collected during each quarterly inspection to evaluate the performance of the leak detection system. The following data were recorded:

- Hour meter reading (recorded the amount of time the sump pump operated)
- Water level reading (displays the level of water in leak detection sump during the inspection)
- Totalizer readings (cumulative gallons of water pumped from the leak detection sump and into the evaporation pond) both the day of the inspection and the following day.

The collected and calculated data are located in Table 4-6.

Table 4-6. Evaporation pond leak detection quarterly monitoring data.

Inspection Date	Hour Meter (hr)	Water Level (in.)	Totalizer Day 1[a] (gal)	Totalizer Day 2[a] (gal)	Totalizer Difference (gal)	Estimated Surface Area of Water (ft^2)	Pond Bottom Covered[b] (%)	Leak Rate[c] (gal)
3/22/06	5,379.8	11.5	6,166.5	6,166.5	0	(snow-covered)	NA[d]	0
5/17/06	5,422.1	13.7	34,630.7	34,630.7	0	76,989	100%	0
9/6/06	5,422.3	13.9	34,783.8	34,783.8	0	66,980	87%	0
10/16/06	5,422.3	14.1	34,783.8	34,783.8	0	70,830	92%	0

a. The leak rate calculation requires the inspector to record totalizer readings once per day over two consecutive days. "Day 1" is the first day of the inspection visit, and "Day 2" is the second.
b. Bottom surface area of the evaporation pond is 76,989 ft^2.
c. Leak rate = (totalizer reading Day 2 – totalizer reading Day 1)/percent of pond bottom covered by water.
d. NA = not applicable.

During each quarterly inspection on the dates listed in Table 4-5, the leak detection system was found to be in satisfactory condition and no maintenance items were identified. However, some maintenance items were identified for the system during noninspection periods as discussed below.

As reported in the 2005 TFIA Annual Report (DOE-ID 2006), the high-water-level indicator light affixed to the top of the leak detection control panel was observed lit on December 26, 2005. On January 2, 2006, INTEC and project personnel assessed the condition of the leak detection system and reported that the "Pump On" indicator light was lit but the pump was not operating (no discharge back into the evaporation pond). The visiting group arranged for a facility electrician to examine the control panel the following day. On January 3, 2006, a facility electrician inspected the controls and replaced a blown fuse which returned the system to operational condition. A postmaintenance system check was performed on the leak detection system on March 29, 2006. The results of the check showed that the system was operating normally.

As required by the TFIA O&M Plan, an annual system check of the Olive Avenue Lift Station was performed on August 12, 2006. Results of the system check showed the system operated normally but two maintenance items were reported. The first item was that the "Motor Overload Tripped" indicator light bulb was bad. This bulb was replaced the following week by the testing utilities operator. The second item was that one of two desiccant vent filters was found to be nearly spent and the recommendation was made to have it replaced. The replacement of this filter was delayed due to the

ordering of the part and combining the installation of the filter with other area work. This filter was replaced on January 11, 2007.

4.6 Evaporation Pond Liner and Perimeter

The evaporation pond and perimeter areas were inspected quarterly on the dates listed in Table 4-1 for the following items during 2006:

- Liner integrity (rips/tears/environmental degradation)
- Animal intrusion
- Vegetation growth
- Liner anchoring integrity/excessive tension
- Pond inlet and outlets free of sediment and debris
- Perimeter fence integrity/personal flotation devices in place
- No change to radiological controls.

During an Agency inspection visit on April 26, 2006, it was observed that the leak detection system's totalizer reading was significantly higher than what was recorded the previous month during the quarterly inspection. On March 22, 2006, during a scheduled quarterly inspection, the totalizer reading was noted to be 6,166.5 gal and on April 26, 2006, the totalizer reading was noted to be 28,005.1 gal for a difference of 21,838.6 gal. Upon receipt of notification of this off-normal totalizer reading, project management formulated a technical response team to discuss and implement appropriate action to evaluate the excessive pumpage of water from the secondary liner in the evaporation pond. Actions implemented were

- Develop a round sheet to monitor the hour meter and totalizer daily (Monday – Thursday).
- Perform a visual inspection of the liner (above the water level) to determine condition. Prepare Agency notification email and discuss on upcoming conference call.
- Evaluate monitoring improvements (real-time).

Daily monitoring of the system's condition was implemented on May 4, 2006, and the Agencies were informed on May 5 of the issue being investigated. Project personnel inspected the pond liner on May 17. At that time, the pond was filled with over 2 ft of water as estimated from the NW corner. The pond liner and water perimeter areas were visually inspected and the only item of concern that may be contributing to the high leak rate was the boot seal (seal between the HDPE liner and the CMP inlet pipe). But due to the high water level in the pond, a close visual inspection could not be performed. On July 10, an engineering inspection was performed at the evaporation pond. Visual inspections of the hot wedge welds around the pond were made by pulling back on the liner near the water level to find any defective welds, and all extrusion welds were inspected. Results of the inspection were that all welds appeared to be in good condition and the liner itself showed no signs of deterioration or holes/slits. The only item found that was thought to be a source of leakage was the rubber caulking sealant around the end of the culvert that was beginning to detach in a few places. However, as before, the high water level prevented a more thorough investigation.

In September, when the water in the pond receded away from the pond inlet, another visual inspection of the inlet boot was conducted. No obvious signs of holes or slits were observed, but the rubber caulking sealant around the end of the culvert was beginning to peel off. Based on limited access/view, the gasket between the liner and the culvert appeared to be in place. A review of the daily system status revealed that the leakage rate increased dramatically when the water level was at or above the bottom of the CMP inlet. As shown in Figure 4-1, high leakage rates were observed when the water level in the pond was at or above the level of the bottom of the CMP. When the water level dropped below the bottom of the CMP, the leakage rate dropped dramatically, and after May 24, 2006, the leakage rate dropped to 0 and remained at 0 for the remainder of 2006.

With the information obtained from the visual inspections and the evaluation of the monitoring data, the project concluded that the rubber seal was the cause of the high leak rate. The HDPE liner manufacturer was contacted and provided the recommendation to apply a neoprene flashing cement to the contact between the boot liner and CMP as it was compatible for use on HDPE material. The old seal has since been removed and replaced with neoprene cement and the work was completed during the first week of December 2006. Success by this repair in reducing the leak rate will be determined when the water level again rises to the CMP inlet level (spring 2007). The boot area is the only place where this rubber sealing material was used during initial construction. This issue is restricted to the boot area and is not a more widespread problem within the pond.

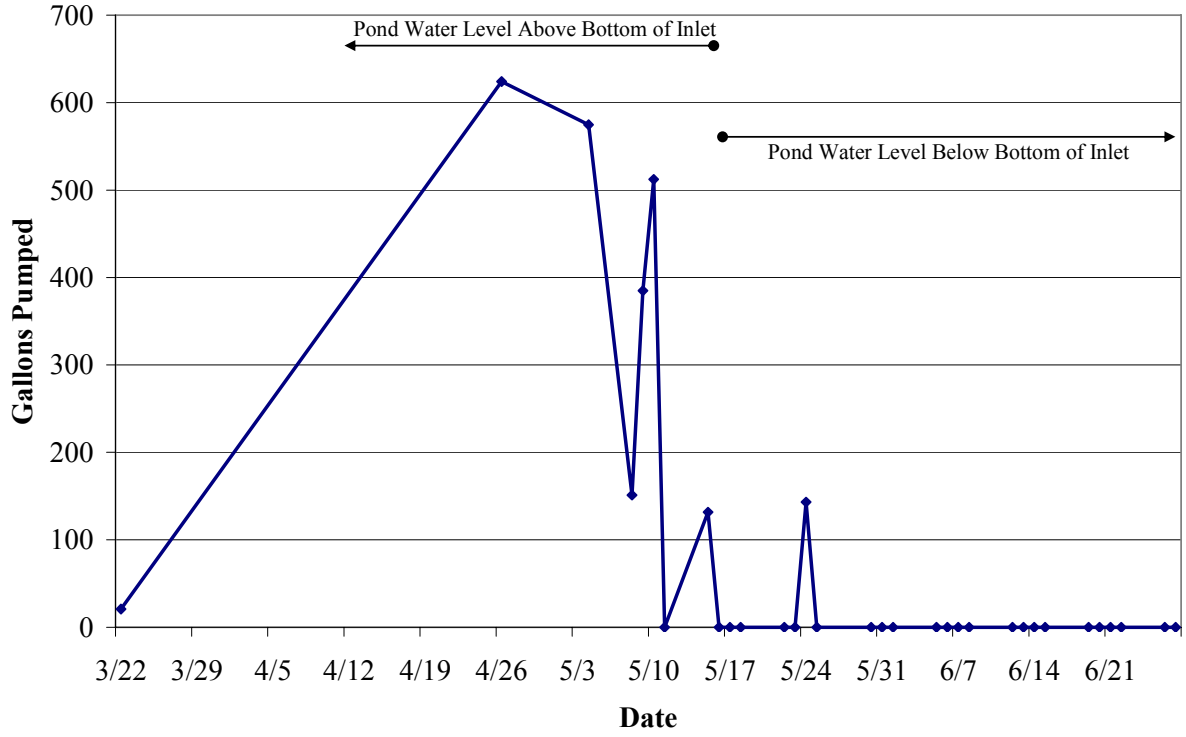

Figure 4-1. Daily gallons of water pumped from the evaporation pond sump from March 22 through June 27, 2006.

4.7 Evaporation Pond Sediment Inspections

Quarterly inspections were performed on the evaporation pond inlet (northwest corner), outlets (eastern edge), and bottom for sediment and debris accumulation. No notable amounts of sediment and debris were observed in the pond inlet and outlets (thus, no sediment sampling and analysis activities took place as required by the O&M Plan).

5. AN ESTIMATE OF MAINTENANCE ACTIVITIES REQUIRED FOR THE NEXT YEAR

All simple maintenance items reported on the inspection forms were addressed after they were identified (e.g., sediment and debris located in the lined drainage ditches were removed). The more complex items require planning and will be addressed by incorporating them with planned facility maintenance activities. Table 5-1 describes identified maintenance items that are planned for maintenance activities during 2007.

Table 5-1. Summary of maintenance activities for 2007.

Date Reported	Item Description	Planned Action	Estimated Cost	Estimated Completion Date
8/14/06	Liquid level switches in the Olive Avenue lift station are not set to design levels.	Submit work request to have the liquid level switches set to activate the pumps at the design water levels. Revise the test procedure.	$2K	July 2007
7/18/06	Headwall to grated inlet (G1) is cracked.	Monitor condition. Repair as necessary to minimize further damage.	$1K	April 2007

6. REFERENCES

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10 CFR 835.1102, 2006, "Control of areas," *Code of Federal Regulations,* Office of the Federal Register, November 2006 (as promulgated as of October 1999).

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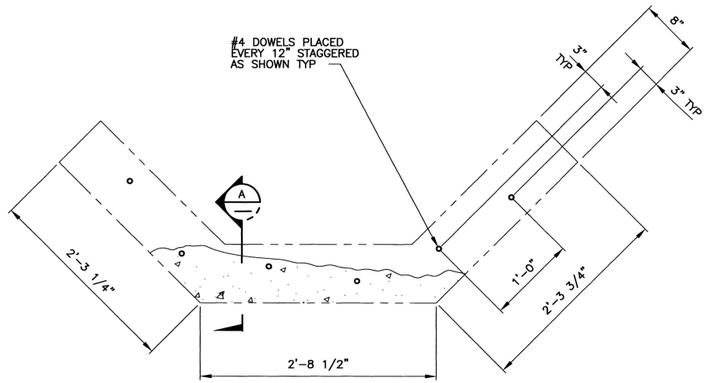
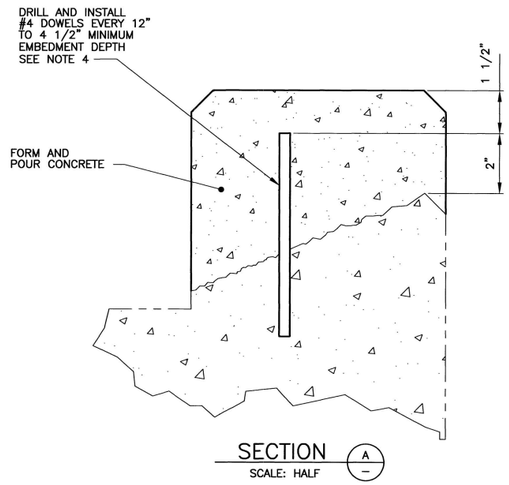
Appendix A

Design Drawing for the Repair of Damaged Headwall



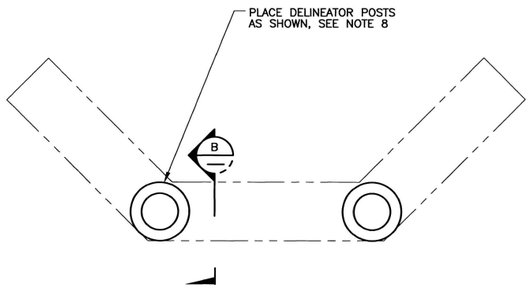
HEADWALL PLAN VIEW

SCALE: 1 1/2"=1'-0"



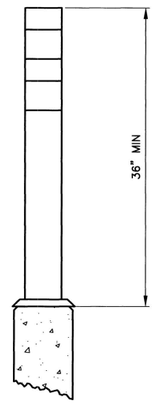
SECTION

SCALE: HALF



HEADWALL PLAN VIEW

SCALE: 1 1/2"=1'-0"



SECTION

SCALE: 1 1/2"=1'-0"

NOTES:

1. NEW CONCRETE SHALL BE CLASS 45, 4500 PSI MINIMUM COMPRESSIVE STRENGTH IN ACCORDANCE WITH ACI 301.
2. 3/4" CHAMFER ON ALL EXPOSED CORNERS
3. REMOVE ALL LOOSE CONCRETE AND AGGREGATE FROM DAMAGED AREA PRIOR TO POURING CONCRETE.
4. ANCHOR DOWELS WITH HILTI'S HIT RE 500 OR HVA CAPSULE ADHESIVE ACCORDING TO MANUFACTURER RECOMMENDATIONS.
5. APPLY CONCRETE BONDING AGENT IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS TO EXISTING SURFACE PRIOR TO POURING CONCRETE.
6. 1.5" MIN CONCRETE COVER OVER DOWELS AND REBAR.
7. DELINEATORS SHALL BE ROUND SURFACE MOUNT TYPE AND MOUNTED USING PC-7 A/B EPOXY FOR TRAFFIC CONTROL PRODUCTS. DELINEATORS SHALL BE ORANGE AND A MINIMUM OF 36" TALL WITH (2) 3" REFLECTIVE BANDS, AND SHALL HAVE A MAXIMUM BASE DIAMETER OF 8'.
8. SURFACE PREPARATIONS SHALL BE AS RECOMMENDED BY THE EPOXY MANUFACTURER.

REV	DATE	DESCRIPTION
		REVISION HISTORY

SCALE: HALF

SCALE: 1 1/2" = 1'-0"

DESIGN PHASE:	AFC
QUALITY LEVEL:	4
HORIZONTAL SCALE	NOTED
VERTICAL SCALE	NA
FOR DRAWING INDEX SEE DRAWING NO.	636257

INITIALS AND DATE FOR CURRENT RELEASE ONLY

	INITIALS	DATE:
DESIGN: MD VARVEL	MV	7/28/06
DRAFTER: WT HOWARD	WTH	7/28/06
DRAFTING CHECK: G MACE	GM	7/28/06
TECHNICAL CHECK: EDS	-	-
ENG GROUP SUPERVISOR: KD FRITZ	KDF	7/28/06
DESIGN PROJECT ENG: CJ HURST	CJH	7/28/06

Idaho Cleanup Project

INTEC
TANK FARM INTERIM ACTION
REPAIR OF DAMAGED HEADWALL

HEADWALL PLANS AND SECTIONS

PROJECT NO.	20978
SPCL CODE:	
EFFECTIVE DATE:	7/28/06

INDEX CODE NUMBER			
AREA	TYPE	CI	ORIG
200	0100	62	136

SIZE D | DWG- 636258 | REV

DRF NO. 312957 | SHEET C-1