

2004 Annual Inspection Report for the Weldon Spring, Missouri, Site

Summary

The Weldon Spring Site, located in St. Charles, Missouri, was inspected on November 17 and 18, 2004. The inspection was conducted in accordance with the Draft-Final *Long-Term Surveillance and Maintenance Plan for the Weldon Spring, Missouri, Site* (August 2004), and associated inspection checklist. Representatives from the U.S. Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (MDNR) participated in the inspection. Representatives from the Weldon Spring Citizens Commission (WSCC) and the Missouri Department of Conservation (MDC) participated in portions of the inspection. The Weldon Spring Site is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site.

The main areas inspected at the site were areas where future institutional controls will be established, the quarry, the disposal cell, Leachate Collection and Recovery System (LCRS), monitoring wells, and assorted general features.

The Institutional Control areas were inspected to ensure that pending restrictions such as excavating soil, groundwater withdrawal, residential use, etc., were not being violated. Each area was inspected and no indications of violations of future restrictions were observed.

The disposal cell was inspected by walking ten transects over the cell and around the cell perimeter at the grade break and the base. Some small depression areas on the cell top and a minor surface disturbance on the side slope were noted for further observation. Five areas of the cell which had been marked and located by global positioning system (GPS) survey equipment during the 2003 annual inspection were located and observed for any signs of rock degradation. Some erosion areas on the north side of the chemical plant property were observed. The LCRS also was inspected and found to be in good condition. Fifty-seven of 119 groundwater monitoring wells were inspected and found to be in generally good condition. One well in the Southeast Drainage had been repainted and the number had not been reapplied, although the brass monument with the well number, which is on every well, was clearly visible. Other site features including the prairie, site markers, and roads also were inspected.

1.0 Introduction

The Weldon Spring Site is in southern St. Charles County, Missouri, approximately 30 miles west of St. Louis, as shown in Figure 1. The site consists of two main areas, the Weldon Spring Chemical Plant and the Weldon Spring Quarry, both located along Missouri State Route 94.

In 1941, the U.S. Government acquired 17,232 acres (6,974 hectares) of rural land in St. Charles County to establish the Weldon Spring Ordnance Works. From 1941 to 1945, the U.S. Department of the Army (Army) manufactured trinitrotoluene (TNT) and dinitrotoluene (DNT) at the site. These operations resulted in nitroaromatic contamination of soil at the plant site, sediments in drainages originating at the site (Frog Pond Outlet and the Southeast Drainage), groundwater near the site, and some off-site springs.

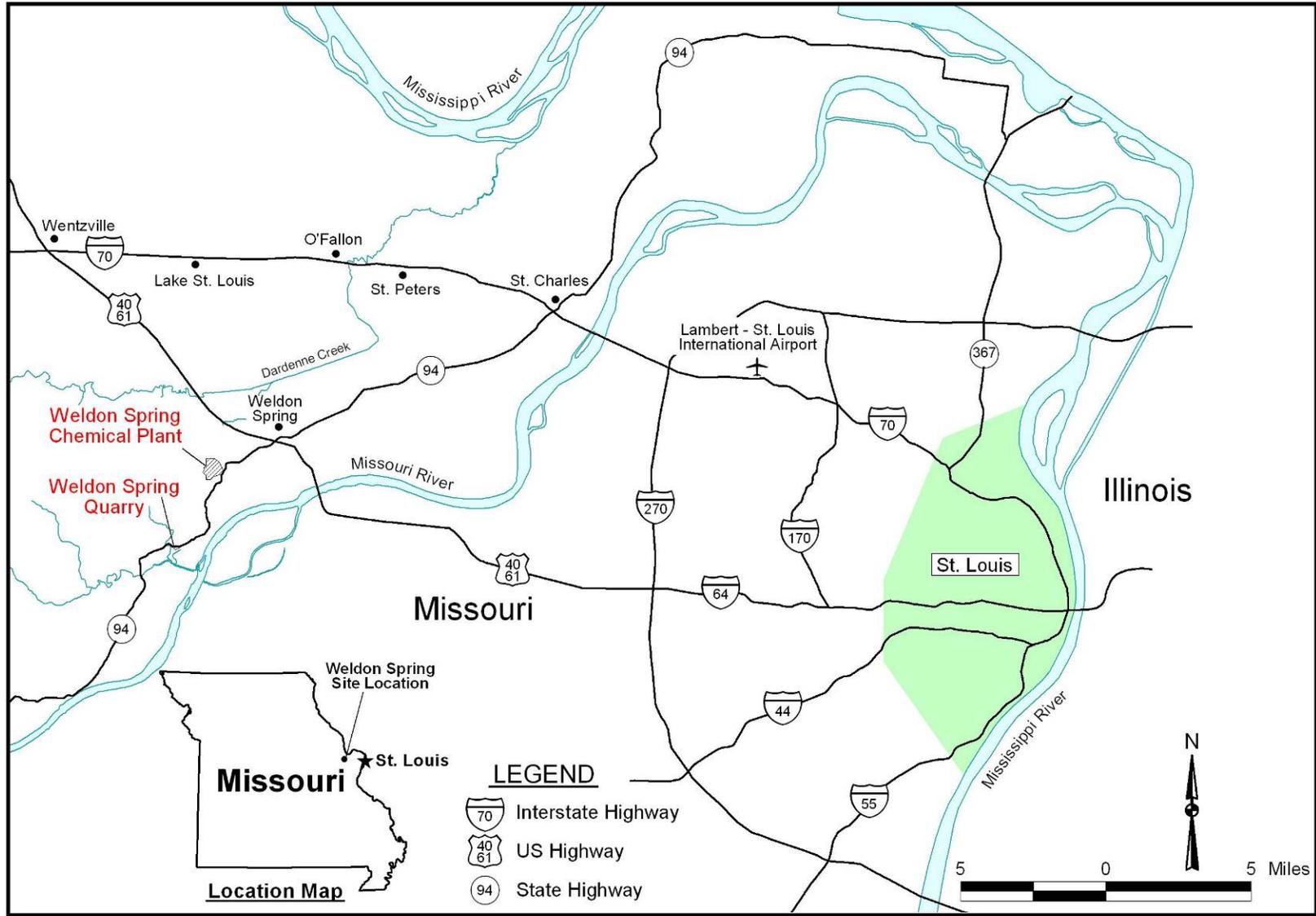


Figure 1. Location of the Weldon Spring, Missouri, Site

The former ordnance works property was transferred to the U.S. Atomic Energy Commission (AEC) in 1956 for construction of the Weldon Spring Uranium Feed Materials Plant now referred to as the Weldon Spring Chemical Plant. The plant converted processed uranium ore concentrates to pure uranium trioxide, intermediate compounds, and uranium metal. A small amount of thorium also was processed. Wastes generated during these operations were stored in four raffinate pits located on the plant property. Uranium processing operations resulted in radiological contamination of the same locations previously contaminated by former Army operations.

The Weldon Spring quarry was mined for limestone aggregate used in construction of the ordnance works. The Army used the quarry for burning wastes from explosives manufacturing and disposal of TNT-contaminated rubble during the operation of the ordnance works. These activities resulted in nitroaromatic contamination of the soil and in rock fractures at the quarry, in groundwater under the quarry and between the quarry and Femme Osage Slough.

In 1960, the Army transferred the quarry to the AEC, who used it from 1963 to 1969 as a disposal area for uranium and thorium residues from the Chemical Plant (both drummed and uncontained), contaminated building rubble, process equipment, and soils from demolition of a uranium processing facility in St. Louis. Radiological contamination occurred in the same locations as the nitroaromatic contamination.

Uranium processing operations ceased in 1966 and the Quarry and Chemical Plant areas were placed on the National Priorities List in 1987 and 1989, respectively. Remediation of the Weldon Spring site was administratively divided into four Operable Units (OUs): Quarry Bulk Waste OU, Chemical Plant OU, Quarry Residuals OU, and Groundwater OU. Records of Decision for each OU have been approved. The Southeast Drainage was remediated as an interim response action through a separate engineering evaluation/cost analysis.

The remedy for the Quarry Bulk Waste OU consisted of excavating and removing bulk waste from the quarry and transporting it along a dedicated haul road to an engineered temporary storage area located at the chemical plant. The Chemical Plant OU remedy included removal of contaminated soils, sludge, and sediment, treatment of wastes as appropriate by chemical stabilization/solidification and disposal of the chemical plant and quarry bulk wastes in an engineered on-site disposal facility. The Quarry Residuals OU addressed residual soil contamination in the quarry proper, surface water and sediments in the Femme Osage Slough, and contaminated groundwater. The Groundwater OU addresses the groundwater at the chemical plant area. The Southeast Drainage was remediated by removal of selected sediment in accessible areas of the drainage.

The final site conditions from the above remedial actions include the following:

- An on-site disposal cell contains 1.48 million cubic yards of contaminated material.
- Residual groundwater contamination remains in the shallow aquifer beneath both the Chemical Plant and Quarry.
- Several springs near the Chemical Plant area discharge residually contaminated groundwater.
- Residual soil and sediment contamination remain in the Southeast Drainage.

- Contamination remains at two culverts, one along Missouri State Route 94 and one along Highway D.
- Residual soil contamination remains at inaccessible locations within the Quarry.

The purposes of the annual inspection were to confirm the integrity of the visible features (such as disposal cell, LCRS, and monitoring wells) at the site, document the site condition subsequent to remediation and restoration, identify changes in conditions that may affect site integrity, determine if institutional controls are adequately implemented, and determine the need, if any, for maintenance or additional inspections and monitoring.

At the time of the inspection eight personnel from S.M. Stoller Corporation (Stoller), the Technical Assistance Contractor at the U.S. Department of Energy (DOE) office in Grand Junction, Colorado, were employed full-time at the site and three part-time. Also employed at the site were two full-time subcontractor employees, and four part-time subcontractor employees.

This report presents the results of the DOE annual inspection of the Weldon Spring Site. The following personnel from Stoller were the lead inspectors during the inspection:

Dick Johnson, Grand Junction, Colorado
Terri Uhlmeyer, Weldon Spring Site

Dick Johnson was one of the lead inspectors for the institutional control areas and for the disposal cell inspection. He has been supporting long-term management activities for DOE low-level radioactive disposal sites for 4 years. Dick currently is serving as the DOE contractor site lead for ten disposal sites located in seven states. He inspects at least 15 sites annually and prepares the inspection reports for many of those inspections. He also prepares an annual compliance report, currently addressing 19 disposal sites, to comply with U.S. Nuclear Regulatory Commission general license requirements. Dick has 9 years experience working as a hydrogeologist and performing civil engineering design and construction inspection for an engineering and architectural consulting firm. During the past 15 years his responsibilities have included radiological characterization, engineering design, remediation, demolition, disposal, verification, long-term site management, and compliance documentation for various CERCLA, Uranium Mill Tailings Remedial Action (UMTRA), and Decontamination and Decommissioning projects for DOE contractors. Dick Johnson has a B.S. degree in geology and an M.S. degree in geomorphology, and is a Certified Professional Geologist.

Terri Uhlmeyer was one of the lead inspectors for the institutional control areas and for the disposal cell inspection. She also coordinated the inspection and preparation of this report. Terri worked for the U.S. Environmental Protection Agency for 4 years as a Resource Conservation and Recovery Act (RCRA) inspector and compliance officer, and conducted numerous inspections during that time and attended several inspection training courses. She has worked at the Weldon Spring Site for 14 years, and served as the Regulatory Compliance Manager for 11 years and was in charge of inspections at the site. She has also been involved in the CERCLA documentation, waste management, and safety aspects of the project and has prepared many reports and plans for the site. Terri Uhlmeyer has a B.S. degree in Petroleum Engineering.

The following support personnel from Stoller participated in the inspection:

Randy Thompson, Weldon Spring Site

The following support personnel from subcontractor companies participated in the inspection:

Clark Oberlag, Pangea
Greg Nadler, Graphic Engineering

The following personnel observed the inspection and provided oversight:

Tom Pauling – DOE
Dan Wall – EPA, Region VII
Ben Moore – MDNR
Steve Lang - MDNR
John Vogel – MDC
Nancy Dickens – Maxim (consultant to WSCC)
DeDe Aubuchon – WSCC member
Tom Nelson – WSCC member

The inspection was conducted in accordance with the Draft-Final *Long-Term Surveillance and Maintenance Plan for the Weldon Spring, Missouri, Site* (LTS&M Plan), dated August 2004.

2.0 Inspection Results

Prior to the inspection, the site inspection agenda (Appendix A) was reviewed with the inspection participants. A safety briefing was also held prior to the inspection. Following is a summary of the inspection results. The inspection base map, which includes the locations of the photographs, is included as Figures 2 and 3. The checklist (from Appendix H of the LTS&M Plan) is included in this report as Appendix B.

2.1 Institutional Controls Inspection

Section 2.3.4 of the LTS&M Plan states that “DOE will conduct a formal annual inspection of the physical locations addressed by institutional controls. DOE also will evaluate whether the institutional controls remain effective in protecting human health and the environment and will take appropriate action if evidence indicates controls are not effective, in coordination with EPA and MDNR.”

The majority of the instruments for institutional controls are still pending and not yet formally in place. The institutional controls that are in place include a Notation of Land Ownership on the Chemical Plant and Quarry Property which is filed with St. Charles County; the interpretive center; a license granting DOE permission to abandon or install and operate groundwater wells and perform sampling; and a license granting DOE continuing operation and maintenance of the effluent discharge pipeline that runs from DOE property to the Missouri River and through the Katy Trail. During the inspection, the pending institutional control areas were inspected in accordance with the current information in the LTS&M Plan. Figures 4 and 5 are the institutional control location maps from the LTS&M Plan.

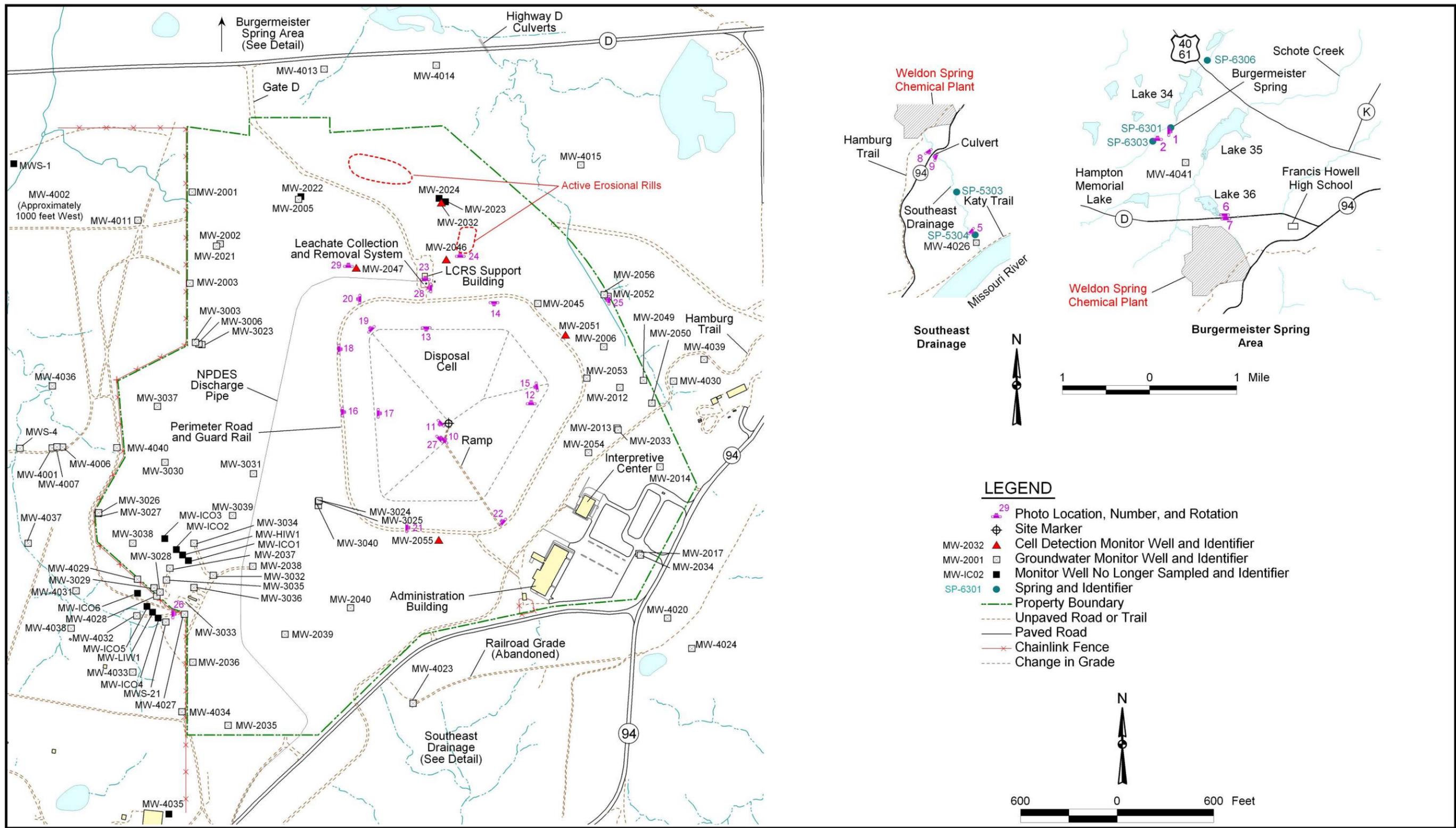


Figure 2. 2004 Inspection Map for the Chemical Plant Area of the Weldon Spring, Missouri, Site

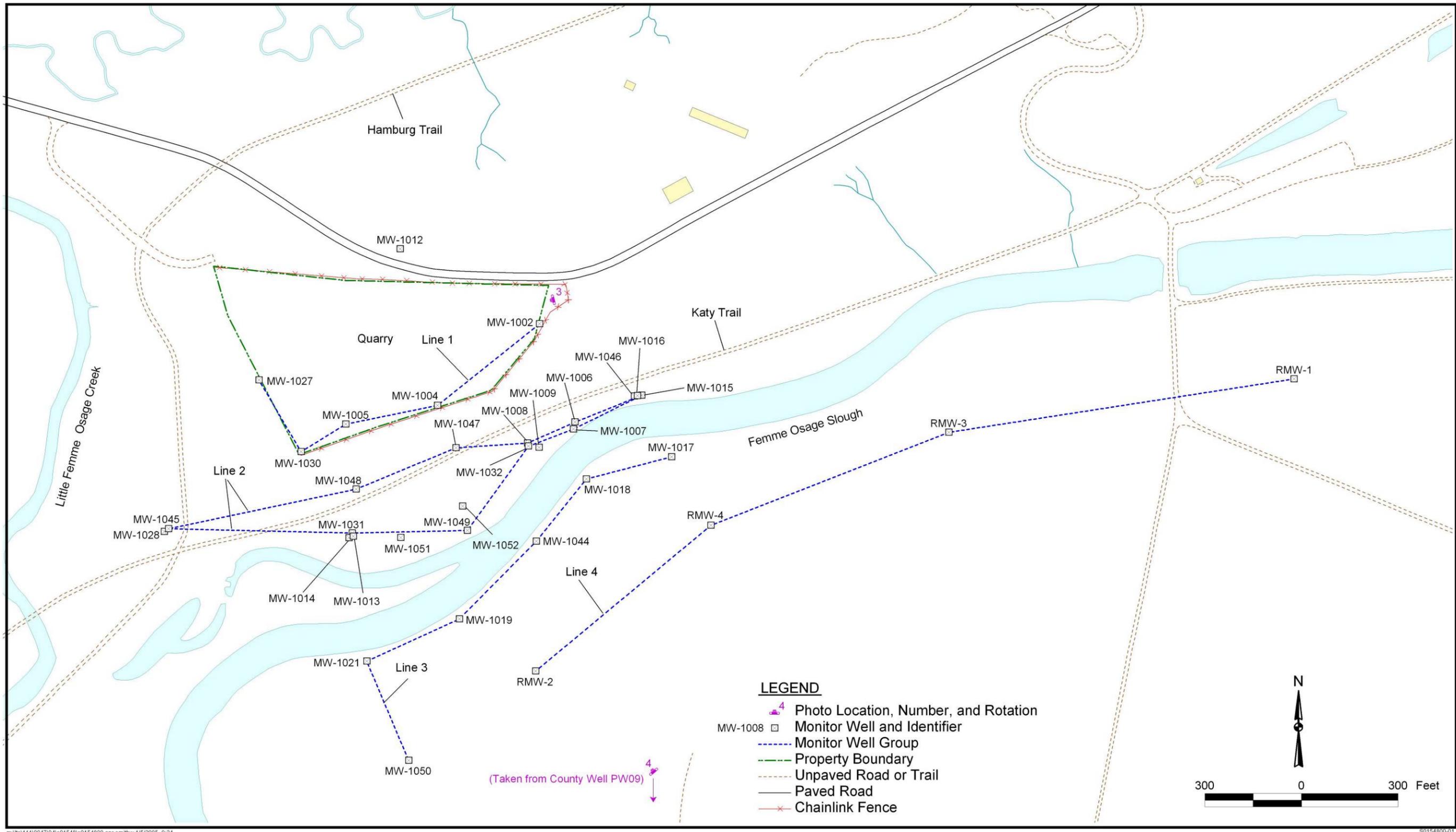


Figure 3. 2004 Inspection Map for the Quarry Area of the Weldon Spring, Missouri, Site

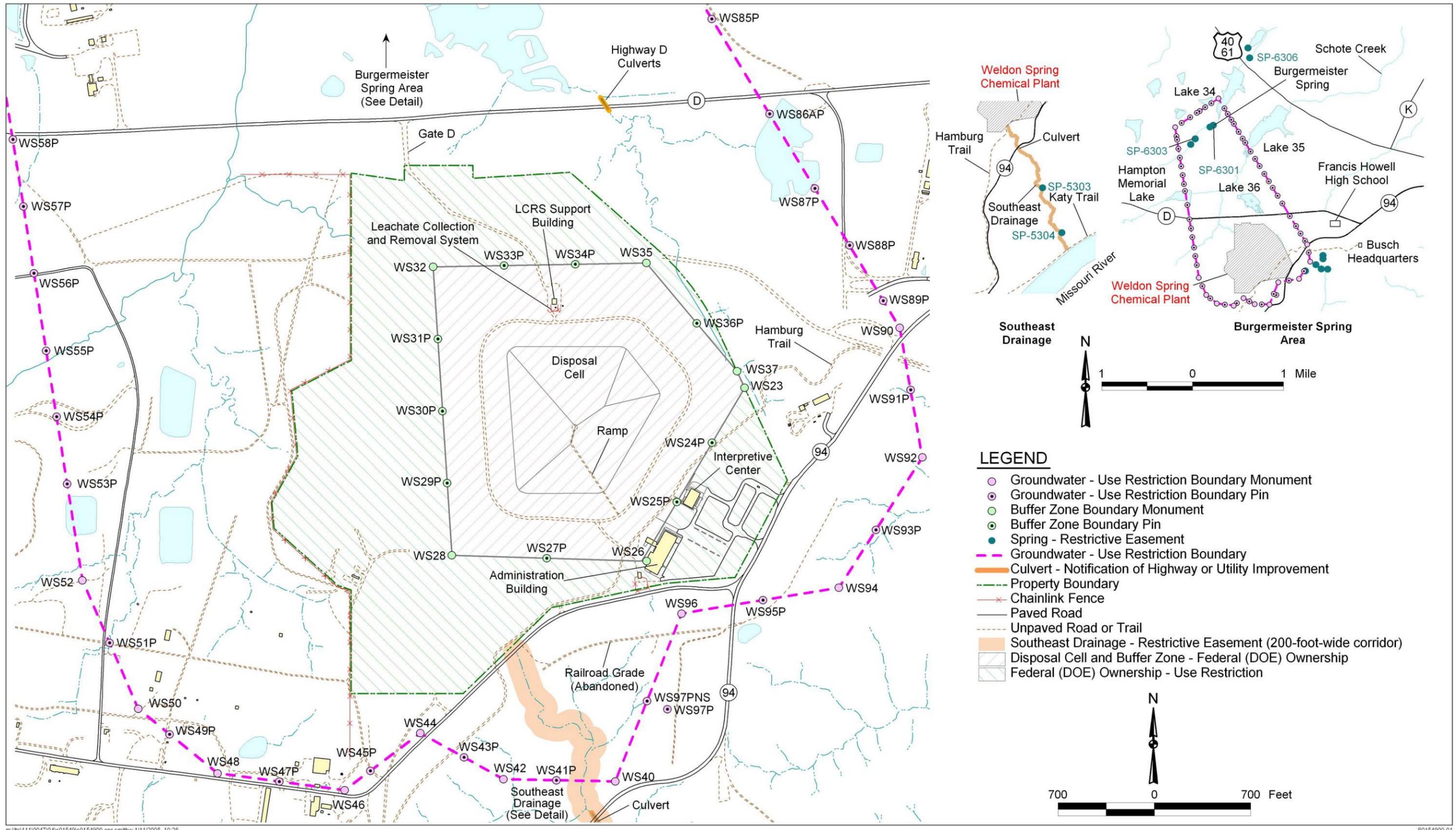


Figure 4. Institutional Controls Location Map for the Chemical Plant Area of the Weldon Spring, Missouri, Site

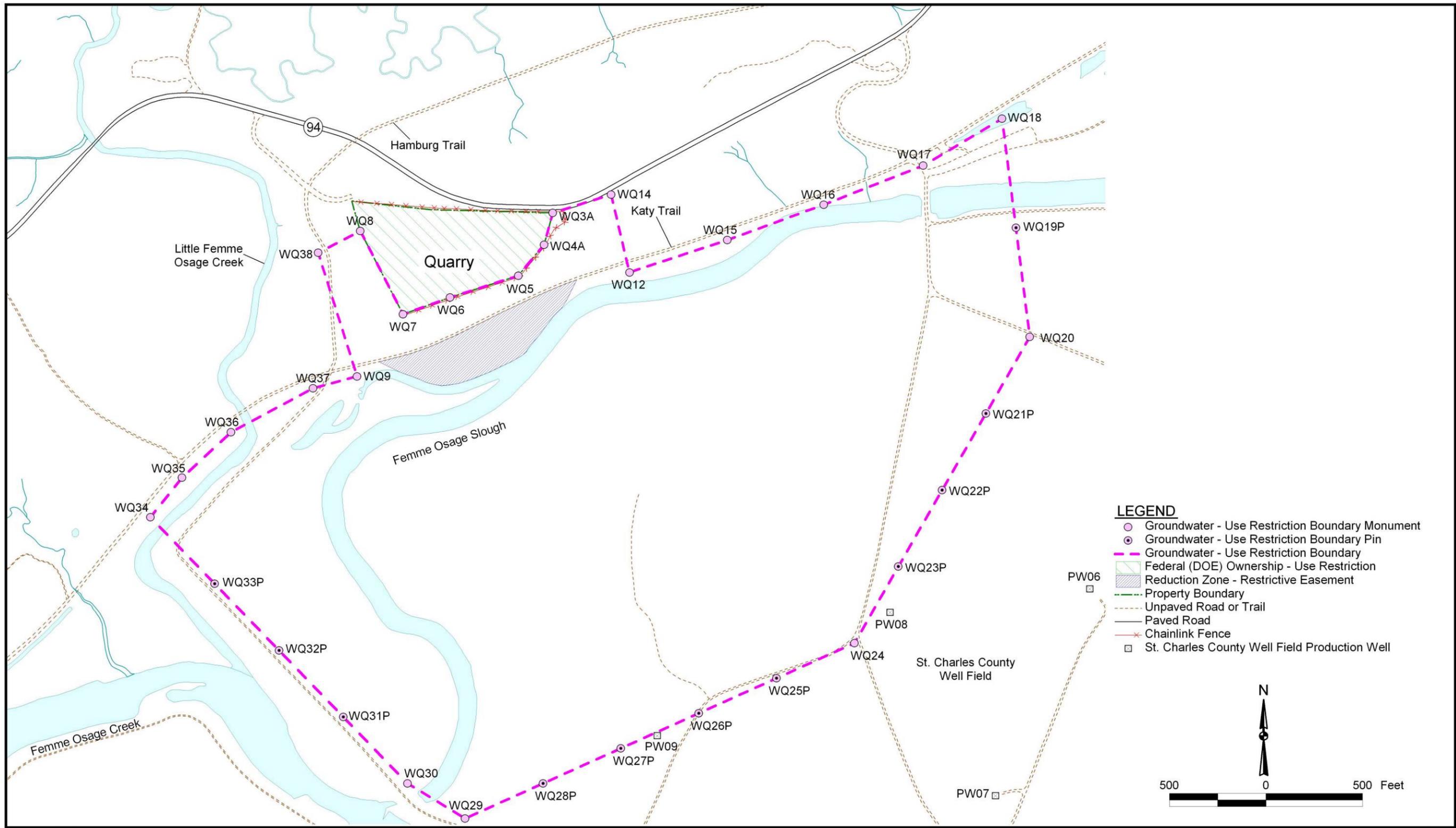


Figure 5. Institutional Controls Map for the Quarry Area of the Weldon Spring, Missouri, Site

The institutional control areas are listed below as they are stated in the inspection checklist:

2.1.1 Land and Shallow Groundwater Use Within the Site Proper Boundary (Outside Disposal Cell Buffer Zone)

Inspect for indications of excavations into soil or bedrock and groundwater withdrawal or use in restricted areas. If any party has been granted use of portions of the Chemical Plant area, inspect to ensure that land use is in compliance with the terms of the restrictions within the notation.

Inspection Results: This area was inspected and no indications of excavations into soil or bedrock or groundwater withdrawal or use were observed. MDC use and maintenance of the Hamburg Trail across DOE property is pending final agreement. Lindenwood University has been granted use of the Administration Building and its use is consistent with the agreement. Current land use remains consistent with the planned institutional controls. Some erosion areas were noted and are discussed in Section 2.4.

2.1.2 Land and Shallow Groundwater Use at DOE Site Proper Disposal Cell and Buffer Zone

Inspect for indications of excavations into soils and bedrock and for residential use of the shallow groundwater within the buffer zone. Inspect to ensure that the land use continues to be in compliance with the terms of the restrictions within the notation.

Inspection Results: This area was inspected and no indications of excavations into soils and bedrock and no residential use of the shallow groundwater within the buffer zone were observed. Current land use remains consistent with planned institutional controls. The buffer zone boundary survey monuments were inspected prior to the site inspection and found to be in excellent condition. The monument locations are shown in Figure 4. During the inspection a monument and two survey pins were located. One pin was located in a small erosion area but was stable.

2.1.3 Groundwater Use in Areas Surrounding the Chemical Plant

Groundwater use will be restricted in this area. Inspect affected areas for evidence of groundwater or spring water use (Burgermeister Spring and Spring 6303). Inspect to ensure that land use continues to be in compliance with the terms of the license, easement, or permit and the restrictions contained therein.

Inspection Results: The surrounding area where groundwater use will be restricted was inspected. This includes property owned by the MDC and the Army. No evidence of groundwater use was observed and current land use remains consistent with planned institutional controls on both properties. Burgermeister Spring 6301 and Spring 6303 were inspected and there were no indications of spring water use (Photos 1 and 2). The access road which crosses in front of Spring 6303 has been removed because a culvert was washed out during a 6-inch rain during the summer. The inspectors had to park at the end of the former road, walk down the road and cross where the culvert had been. Some survey monuments were inspected on both properties. On the Army property, two of the monuments (WS-48 and WS-50) could not be located during the inspection. Both of the monuments were later located by GPS. A separate monument (WS-52) located about 10 yards into the woods showed evidence that someone had

tried to dig up the monument. This was reported to Adam Ross of the Army while exiting the Army property. The chemical plant groundwater restriction area boundary monuments are shown in Figure 4.

2.1.4 Land and Shallow Groundwater Use on the DOE Quarry Property

Inspect for indications of excavations into soil or bedrock and groundwater withdrawal or use in restricted areas. If any party had been granted use of portions of the Quarry area, inspect to ensure that land use is in compliance with the terms of the restrictions within the notation.

Inspection Results: The Quarry Property was inspected and no indications of excavation into soil or bedrock or groundwater withdrawal or use were observed. Also, no party has been granted use of portions of the Quarry area. Quarry backfill continues to provide positive drainage from the quarry to the Little Femme Osage Creek and vegetative cover remains well established (Photo 3). Current land use remains consistent with planned institutional controls.

2.1.5 Groundwater (Quarry)

Groundwater use is restricted in certain areas. Inspect affected areas for evidence of groundwater withdrawal or use in the area of impact. Inspect to ensure that land use continues to be in compliance with the terms of the license and the restrictions contained therein.

Inspection Results: The groundwater restricted area was inspected and no evidence of groundwater withdrawal or use in the area was observed (Photo 4). The county test wells, which had been noted in last year's inspection as not properly secured, were decommissioned by a DOE subcontractor in April 2004, with the permission of St. Charles County. The subcontractor was under contract to decommission four DOE wells in the quarry area at the same time. Current land use remains consistent with planned institutional controls. The quarry groundwater restriction area boundary survey monuments are shown in Figure 5.

2.1.6 Land Use in Quarry Area Reduction Zone

A naturally occurring reduction zone exists in soil south of the Katy Trail and north of the Femme Osage Slough. Inspect for indications of excavations into soils and bedrock in the uranium reduction zone. Inspect to ensure that land use continues to be in compliance with the terms of the easement and the restrictions contained therein.

Inspection Results: The quarry reduction zone area was inspected and no indications of excavation into soils and bedrock were observed. Land use remains consistent with planned institutional controls.

2.1.7 Southeast Drainage

Check for indications of residential use or construction in the Southeast Drainage (200-foot-wide-corridor), or other activity that would indicate non-recreational use of the area. Check Springs 5303 and 5304 for residential, commercial, or agricultural use of spring water.

Inspection Results: The inspectors walked down the entire Southeast Drainage and no indications of residential use or construction or any other activity that would indicate non-

recreational use of the area were observed. The springs also were inspected and no indications of residential, commercial, or agricultural use of the springs were observed (Photo 5). Current land use remains consistent with planned institutional controls.

2.1.8 Highway D Culvert

Check for signs of disturbance of the affected region where the Frog Pond outlet culverts pass beneath Highway D and in the utility rights-of-way in the affected area.

Inspection Results: The Highway D culvert was inspected (Photo 6). The area where the culvert passes beneath the ditch between Highway D and the north end of the culvert was eroded on top, exposing the culverts (Photo 7). As noted in last year's report, this observation had been brought to DOE's attention, prior to the 2003 inspection, by MDC, who later notified the Missouri Department of Transportation (MoDOT). The MoDOT stated at that time that it was not a priority for them as long as the culverts are not compromised. The inspectors concluded during last year's inspection that the drainage in the ditch was entering the culverts at the joint between the two lengths of culvert and therefore was not eroding soil or sediment beneath the culverts. This conclusion was also supported by a lack of erosion at the outlet ends of the culverts. The area seemed to have more erosion on top of the culverts but the outlets appeared unchanged.

2.1.9 State Route 94 Culvert

Check for signs of disturbance of the affected region where the culvert passes beneath State Route 94 and in the utility rights-of-way in the affected area.

Inspection Results: The State Route 94 culvert was inspected and found to be essentially unchanged since the 2003 inspection. The upstream end was substantially blocked with debris and erosion had occurred on the embankment (Photo 8). The downstream end of the culvert is corroded on the bottom and the last section of pipe is partially separated from the rest of the culvert, causing runoff to leak through and erode beneath the final segment of culvert (Photo 9).

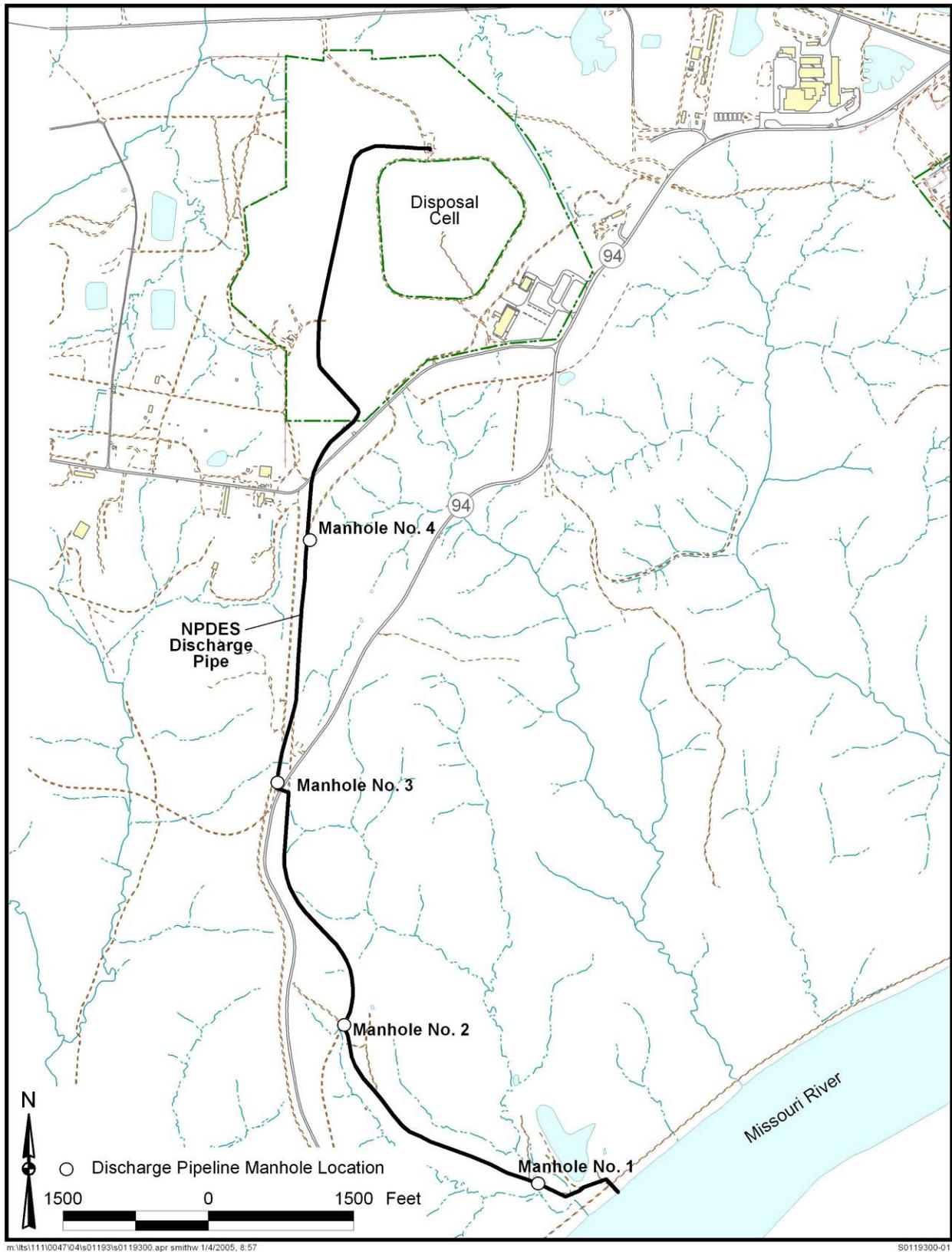
2.1.10 Pipeline from LCRS to Missouri River

Inspect the entire length of the pipeline and outfall for any disturbance or maintenance needs.

Inspection Results: The pipeline area was inspected on November 8, 2004, prior to the annual inspection. As recommended in the 2003 inspection report a walkover was conducted in late 2003 and GPS surveying equipment was used to establish the locations of the manholes and cleanouts. A map of the pipeline, indicating the manhole locations, is shown in Figure 6. It was noted in a memorandum to the file that there were no on-site disturbances of the pipeline and there were no apparent disturbances in the area of the pipeline or manholes in the off-site areas. During the inspection it was observed that significant vegetative growth had covered manhole 1 and 2, but manholes 3 and 4 were free of obstructions.

2.2 Disposal Cell

The disposal cell was inspected in accordance with the LTS&M Plan and the annual inspection checklist. The cell was divided into ten transects (Figure 7). The inspectors divided into two groups and walked five transects each; one group also walked along the grade break at the top of the side slopes and along the cell perimeter (Photos 10, 11, and 12). The inspectors looked for depressions, shifts of cell plane vertices, and other indications of settlement. Other items for



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Figure 6. NPDES Discharge Pipeline Between the LCRS Support Building at the Missouri River, Weldon Spring, Missouri, Site

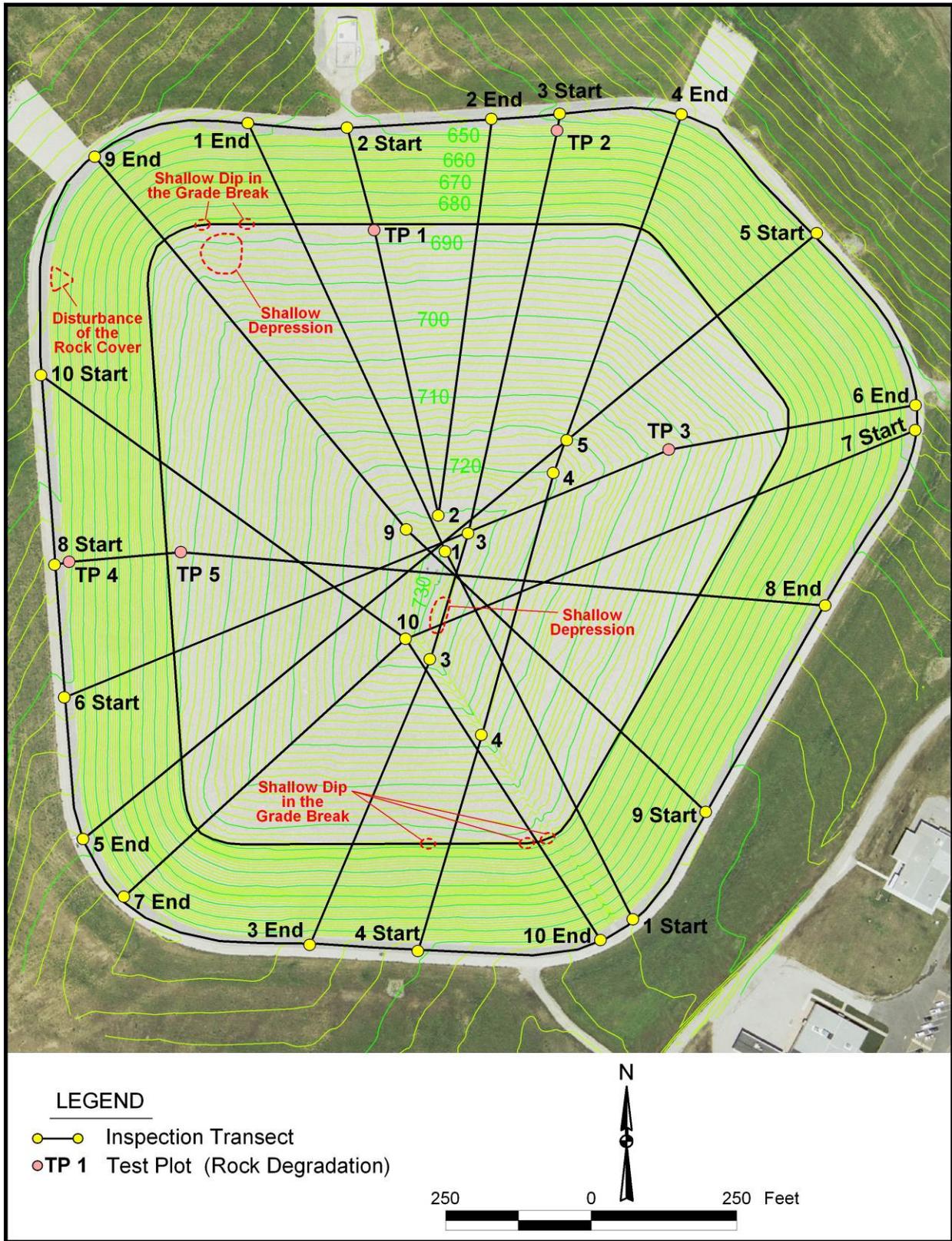


Figure 7. Disposal Cell Inspection Transects and Rock Test Plot Locations at the Weldon Spring, Missouri, Site

inspection were vegetation, wet areas, apron drains, guard rail, and the stairs. A GPS unit was used during the 2003 inspection to map five areas chosen for rock degradation review (Figure 7). The inspectors inspected these areas and observed no rock degradation. These areas are shown in Photos 13 through 17.

A few small shallow depressions on the cell cover and along the grade break were noted during the inspection. It appeared that the depressions ranged up to approximately 2 or 3 inches deep. Also, a small area of surface disturbance was noted at the base of the side slope near the northwest corner of the cell. This area of disturbance was initially identified by the presence of different-colored side slope rocks present on top of the toe apron (Photo 18). Upon further inspection, it was apparent that a small area of the side slope had slipped just enough to rotate the rocks and dislodge some of them. The depressions and area of side slope disturbance are shown in Figure 7.

Mr. Greg Smith, a Stoller professional engineer with geotechnical engineering and disposal cell design experience, evaluated the inspection observations. The shallow depressions on the cell cover and along the grade break are not an unusual occurrence on rock-covered disposal cells and are probably due to localized settling of the rock layer during heavy rainfall events. These depressions are not an indication of a reduction in the erosion protection of the cell or the protectiveness of the cell contents. The area of disturbance on the side slope is most likely due to lubrication and minor slippage between the rock layer and the bedding layer during storm events. Because there has been no rill development and there is no evidence of headward erosion of the side slope materials, erosion protection is still functional. Only clean fill underlies the side slopes, so there is no threat of exposing the cell contents due to the minor slippage of the rock cover. This phenomenon may occur at other locations along the side slope as the cell construction materials reach final consolidation. The cell top depressions and side slope disturbance will continue to be monitored to ensure the protective function of the rock cover.

In accordance with the checklist the inspectors also checked for wet areas or water drainage and observed that none were present. The toe and apron drains were inspected and found to be functioning as designed (Photo 19). A small willow tree was growing on the northwest drainage fin (Photo 20). The guardrail and stairs were in good condition (Photos 21 and 22). Five plants were found on the disposal cell and consisted of a perennial wildflower and some small weeds. The flower was pulled during the inspection and herbicide was applied to the weeds the week after the inspection. The condition of the 300-foot buffer zone was found to be good with vegetation established and the survey monuments were verified to be in place. The areas of erosion which had been repaired during the summer were inspected and found to be stable. Some additional erosion was noted north of the disposal cell and is described in Section 2.4.1. The condition of the prairie was good at this time. A section on prairie maintenance is included in Section 2.11.

2.3 Leachate Collection and Removal System (LCRS)

Operations of the LCRS were discussed with site personnel and the system was inspected. The fences and doors were locked and in good condition. The system was functioning as designed. The LCRS data and documentation were reviewed during the document review period of the inspection and the following information was checked and verified that it was available: sampling data, LCRS flow rates, action leakage rate information, “burrito” system flow rates,

and leachate data. As required by the LTS&M Plan, the leachate production rates, analytical results, and disposal information are provided in Appendix C.

The recent changes to the leachate treatment were discussed and the process changes were presented. The DOE had received notification from MSD earlier this year that the disposal cell leachate must meet radiological drinking water standards prior to acceptance. This includes a limit for uranium of 20 picocuries per liter (pCi/L), which the disposal cell leachate is sometimes slightly above. DOE exercised its pretreatment contingency process equipment and pretreated the leachate through a system of cartridge filters and ion exchange media that is selected for uranium (Photo 23). The leachate was sampled and determined to be well below the limit for uranium. The leachate will continue to be managed in this manner until the leachate is consistently below the 20 pCi/L level for uranium.

2.4 Erosion

2.4.1 Chemical Plant Area

Areas of erosion were identified on the chemical plant property. The areas are north of the disposal cell. The locations of the shallow erosion gullies are shown in Figure 2. One of the erosion areas is slightly inside the buffer zone area and threatens to wash out a buffer zone survey pin (Photo 24).

During the 2003 inspection, erosion areas were identified on the north and northwest sides of the disposal cell. These areas had been recently repaired with soil and mulch at the time of the 2003 inspection. During the spring of 2004, these areas were greatly affected by one or more heavy rainfalls and the repairs were washed out resulting in very large erosion gullies. Also during the 2003 inspection, an area of erosion was identified at the outfall NP-0050 on the southwest side of the property. Runoff from the chemical plant property had flowed under the fence onto the Army property and had eroded out a gravel road used to travel around the Army property. Both of the areas were repaired during July 2004 and were stable at the time of the inspection (Photo 18, 25 and 26). A discussion of the repairs was held during the inspection.

2.4.2 Quarry Area

No visible erosion areas were observed during the inspection of the Quarry area.

2.5 General Site Conditions

General site conditions as listed in the checklist were inspected and are discussed below.

2.5.1 Roads

The roads consist of asphalt roads leading into the property and a gravel road that extends around the disposal cell and to Gate D. The roads were in good condition. Erosion repair near the DOE/Army property boundary was discussed in Section 2.4.1.

2.5.2 Vandalism

There were no signs of vandalism on the chemical plant or quarry properties.

2.5.3 Personal Injury Risks

No personal injury risks were observed.

2.5.4 Site Markers (Four Information Plaques on Top of Cell, Historical Markers, and Other Information Markers)

The four information plaques on top of the cell were in good condition (Photo 27). The historical markers were also in good condition.

The LTS&M Plan states that a sign is posted at the interpretive center providing the LTS&M Program 24-hour and local contact phone numbers. It was noted during the 2003 inspection that a local number (636-926-7079) only was posted. This had been corrected and both numbers are now posted.

The plan also states that signs are posted on the LCRS fence to inform the public that trespassing is forbidden and that persons may call the DOE 24-hour security telephone number (970-248-6070 or 877-695-5322) for information. During the 2003 inspection, it was noted that signs were posted on the LCRS fence on all three sides that stated "U.S. Property, No Trespassing." There were no phone numbers posted at the LCRS. This was corrected after the inspection and signs with the local and 24-hour number were posted on three sides of the LCRS fence (Photo 28).

The Draft Final LTS&M Plan also states that "Inspectors will verify that the phone numbers remain displayed at the Chemical Plant and quarry sites and are listed in local phone directories." During the 2003 inspection there were no phone numbers posted at the quarry. This was corrected after the inspection. The phone number was verified to be in the local phone directory.

2.6 Monitoring Wells

Monitoring wells in the Disposal Cell Monitoring Well Network, Chemical Plant Monitoring Well Network, and Quarry Monitoring Well Network were inspected (Photo 29). The inspection checklist required all the disposal cell wells to be inspected and greater than 10 percent of the chemical plant and quarry wells to be inspected. The checklist required the wells to be inspected to ensure they are properly secured and locked, in good condition, and to check if they need maintenance and have the proper ID number on the well.

2.6.1 Disposal Cell Monitoring Well Network

Each well in the disposal cell network was inspected and is listed below with the inspection observations:

- MW-2032 – secure, properly identified, good condition
- MW-2046 – secure, properly identified, good condition
- MW-2047 – secure, properly identified, good condition
- MW-2051 – secure, properly identified, good condition
- MW-2055 – secure, properly identified, good condition

2.6.2 Chemical Plant Area Monitoring Well Network

The inspection checklist requires at least 10 percent of the wells be inspected from the chemical plant monitoring well network. The monitoring well network consists of 85 monitoring wells. Thirty-one wells were inspected, which is 36 percent of the total network. A list of the inspected wells is included below with noted observations:

MW-2006 – secure, properly identified, good condition
MW-2012 – secure, properly identified, good condition
MW-2013 – secure, properly identified, good condition
MW-2017 – secure, properly identified, good condition
MW-2023 – secure, properly identified, good condition
MW-2024 – secure, properly identified, good condition
MW-2034 – secure, properly identified, good condition
MW-2045 – secure, properly identified, good condition
MW-2053 – secure, properly identified, good condition
MW-2054 – secure, properly identified, good condition
MW-3024 – secure, properly identified, good condition
MW-3025 – secure, properly identified, good condition
MW-3026 – secure, properly identified, good condition
MW-3027 – secure, properly identified, good condition
MW-3040 – secure, properly identified, good condition
MW-4011 – secure, properly identified, good condition
MW-4023 – secure, properly identified, good condition
MW-4026 – secure, needs identification label (has monument stamp with number), good condition.
MW-4027 – secure, properly identified, good condition
MW-4028 – secure, properly identified, good condition
MW-4029 – secure, properly identified, good condition
MW-4030 – secure, number faded, good condition
MW-4034 – secure, properly identified, good condition
MW-4038 – secure, properly identified, good condition
MW-4039 – secure, number faded, good condition
MW-4040 – secure, properly identified, good condition
MW-4041 – secure, properly identified, good condition
MW-ICO4 – secure, properly identified, good condition
MW-ICO5 – secure, properly identified, good condition
MW-ICO6 – secure, properly identified, good condition
MW-LIWI – secure, properly identified, good condition

2.6.3 Quarry Monitoring Well Network

The inspection checklist requires greater than 10 percent of the wells in the quarry monitoring well network to be inspected. The monitoring well network consists of 29 wells. Twenty-one wells were inspected which is 72 percent of the total network at the quarry. The wells that were inspected are listed below, with noted observations.

MW-1002 – secure, properly identified, good condition
MW-1004 – secure, properly identified, good condition

MW-1005 – secure, properly identified, good condition
MW-1006 – secure, properly identified, good condition
MW-1007 – secure, properly identified, good condition
MW-1008 – secure, properly identified, good condition
MW-1009 – secure, properly identified, good condition
MW-1013 – secure, properly identified, good condition
MW-1014 – secure, properly identified, good condition
MW-1015 – secure, properly identified, good condition
MW-1016 – secure, properly identified, good condition
MW-1028 – secure, properly identified, good condition
MW-1030 – secure, properly identified, good condition
MW-1031 – secure, properly identified, good condition
MW-1032 – secure, properly identified, good condition
MW-1045 – secure, properly identified, good condition
MW-1046 – secure, properly identified, good condition
MW-1047 – secure, properly identified, good condition
MW-1048 – secure, properly identified, good condition
MW-1049 – secure, properly identified, good condition
MW-1051 – secure, properly identified, good condition

2.7 On-site Document and Record Verification

The following on-site documents and records were verified:

- Surveillance and Maintenance Plan: (*Draft-Final Long-Term Surveillance and Maintenance Plan for the Weldon Spring, Missouri, Site, August 2004*)
- As-Built Drawings: (disposal cell)
- Contingency Plan/Emergency Response Plan: (*Weldon Spring Site Project Safety Plan, April 2004*)
- NPDES permit(s): (#MO-0107701, revised March 5, 2004)
- Metropolitan St. Louis Sewer District (MSD) agreement and records
- Groundwater monitoring records
- Leachate records
- Interpretive Center sign-in logs
- Telecons and interview records

It was recommended during the document review portion of the inspection that the site consolidate all of its relevant records and documents into one location. It was also recommended that the site keep a maintenance log, which will document all types of maintenance activities at the site, including erosion repairs, well maintenance, LCRS maintenance, etc.

2.8 Contacts

Several stakeholders were notified prior to the inspection in accordance with the checklist. These included:

- St. Charles County Sheriff
- Cottleville Fire District
- Francis Howell High School
- Simplex-Grinnel Alarm System
- Weldon Spring Citizens Commission
- St. Charles County

The institutional control contacts were also contacted in regards to the inspection and to provide an opportunity to begin annual contact with the representatives in regards to institutional controls. In the future, when the institutional controls are established, this annual contact will be used to verify cognizance of the institutional controls and the requirements and/or restrictions with each representative. The representatives contacted are listed below.

- John Vogel – Missouri Department of Conservation
- Joel Porath – Missouri Department of Conservation
- Cynthia Green – Missouri Department of Conservation
- Jennifer Frazier – Missouri Department of Natural Resources – Parks
- Roy Stevenson – Army
- Christina Ostrander – Army
- Don Wichern – Missouri Department of Transportation

The St. Charles Planning and Zoning Department was also contacted and verified that no planning and zoning activities were currently taking place within one-quarter mile of the Chemical Plant and Quarry Property. The St. Charles Recorder of Deeds office was visited on December 13 and it was verified that the Notation of Land Ownership was filed and present at that office.

The Stoller Site Manager, Yvonne Deyo, and Environmental Data Manager, Randy Thompson, were interviewed as required by the inspection checklist.

All conversations and interviews were recorded on an Interview Record form from the EPA *Comprehensive Five-Year review Guidance*. The forms for each of these contacts and interviews are attached as Appendix D.

The U.S. Geologic Survey (USGS) National Earthquake Information Center was not contacted. A procedure has been established that will require the USGS National Earthquake Center to provide email notification to DOE when an earthquake of magnitude 3.0 or greater occurs within 20 miles of the Weldon Spring Site.

2.9 Operation and Maintenance (O&M) Costs

The fiscal year (FY) 2004 long-term surveillance and maintenance costs for the Weldon Spring Site were budgeted at \$1,449,928. The actual costs were \$1,411,383. The cost for other participants was \$173,889. The site is still experiencing a ramp-down and the FY 2004 costs are higher than what is expected in the future.

2.10 Environmental Monitoring Data

The environmental data from the Weldon Spring Site are available on the following DOE website: www.gjo.doe.gov/LM. A monthly internal report is issued which includes validated environmental data results for each month. The report includes a site summary, data trending, chain-of-custody information, adequacy of quality control sample results, data assessment summaries, information on data that are outside the range of historical concentrations, and data that merit explanation or follow-up action, sampling and analytical schedules, trip reports, and sampling location maps.

Results of all environmental monitoring data are summarized and included in the Annual Site Environmental Report. The report includes data trending information and also reports on other aspects of the project including status and regulatory information. The Annual Site Environmental Report for 2004 will be available in July 2005.

2.11 Prairie Maintenance

Section 2.6 of the Draft-Final LTS&M Plan states that routine maintenance of the prairie completed during the previous 12 months will be summarized in the annual inspection report. This summary is as follows:

A variety of prairie maintenance activities have been completed throughout the previous 12 months. An extensive overseeding operation of approximately 450 pounds of prairie grass and forb seed was performed in January 2004. Periodic mowing was performed throughout the year in order to limit weed establishment. Herbicide was applied in select locations to limit encroachment of invasive exotic weed species from surrounding properties. Manual weeding also was performed throughout the prairie area.

A garden of plants native to the state of Missouri was designed and constructed to surround the Interpretive Center and build awareness about the Weldon Spring Site. Landscape design was completed in January 2004 and garden installation was completed in June 2004. Garden maintenance which consisted of manual weeding and occasional irrigation was performed throughout the growing season.

3.0 Findings and Recommendations

1. **Finding:** One of the monitoring wells in the Southeast Drainage (MW-4026) had been repainted, but the large numbers had not been reapplied. A brass monument with the number stamped on it was clearly visible. The numbers on two wells (MW-4030 and MW-4039) were faded.

Corrective Action: Apply appropriate identification number to MW-4026 and reapply numbers on MW-4030 and MW-4039.

Target Date: March 2005

2. **Finding:** Erosion is present on the north side of the chemical plant. A small area of erosion exists within the buffer zone and threatens to wash out a buffer zone area survey pin.

Corrective Action: Survey and map erosion areas outside the buffer zone and monitor the areas. Repair the erosion inside the buffer zone.

Target Date: June 2005

3. **Finding:** Some survey monuments could not be located during the inspection.

Corrective Action: Use the GPS equipment and relocate all survey markers. Develop a system using hand held GPS or other option to be able to easily locate all important locations such as survey points during an inspection.

Target Date: March 2005

4. **Finding:** A few small depressions and a minor surface disturbance were observed on the disposal cell.

Corrective Action: Use the GPS equipment to locate the areas. Continue to monitor these areas.

Target Date: February 2005

5. **Finding:** A small willow tree was observed in the drainage fin on the northwest side of the disposal cell.

Corrective Action: Remove the willow tree and any other trees found.

Target Date: January 2005

6. **Recommendation:** All important records and documents should be in one known location.

Corrective Action: Consolidate and store all on-site documents needed for LTS&M, including the Administrative Record, in fire-proof files in the Interpretive Center.

Target Date: March 2005

7. **Recommendation:** Prepare and maintain a document or log which will be used to track and document all maintenance activities for the site.

Corrective Action: Consolidate maintenance information from various reports into a log updated monthly and stored with site documents in the Interpretive Center.

Target Date: January 2005

8. **Recommendation:** The State Route 94 Culvert remains corroded and the inlet side had become almost completely blocked with debris and by partial collapse. The condition of the culvert is not a remedy issue. The only concern is that the inside of the culvert contains some fixed contamination and the DOE wants to ensure that if the culvert is ever removed that it is disposed of properly. The recommendation is to notify MoDOT of the condition of the culvert as a courtesy, since it was observed during the inspection.

Corrective Action: Notify MoDOT of the condition of the culvert.

Note: Don Wichern of MoDOT was notified of the condition of the culvert and supplied pictures by email. Since MoDOT indicated it would take corrective action to clear the inlet area and spread the debris, DOE requested advance notice in order to be present in the event MoDOT decided in the field to remove any portion of the damaged culvert (see Interview Record form in Appendix D).

9. **Recommendation:** The St. Charles County Sheriff Office and Cottleville Fire Department did not have a current emergency contact list.

Corrective Action: Send the current list to the departments.

Note: Lieutenant Jim Hudson of the St. Charles County Sheriff Office and Cottleville Assistant Fire Chief Skip Gauldin were provided with the current list (see Interview Record forms in Appendix D).

4.0 Photographs



Photo 1. Burgermeister Spring.



Photo 2. Spring 6303.



Photo 3. View of dense vegetation establishing in the Quarry.



Photo 4. View northwest from county well PW09 of the institutional control area south of the Quarry.



Photo 5. Spring SP-5304 in the Southeast Drainage.



Photo 6. View of Highway D culverts from outlet side.



Photo 7. Eroded area of ditch between the exposed Highway D culverts and the highway.



Photo 8. Highway 94 culvert inlet in the Southeast Drainage.



Photo 9. Highway 94 culvert outlet in the Southeast Drainage.



Photo 10. Small depression on top of cell facing northeast from the ramp.



Photo 11. View from the top of the disposal cell facing Southwest.



Photo 12. The edge of the northeast ridgeline of the disposal cell.



Photo 13. Cell cover rock test plot TP1; north edge of north facet.



Photo 14. Cell side slope rock test plot TP2; bottom of north side slope.



Photo 15. Cell cover rock test plot TP3; northeast ridgeline.



Photo 16. Cell cover rock test plot TP4; lower west side slope.



Photo 17. Cell cover rock test plot TP5; west edge of west facet.



Photo 18. Side slope rocks on the apron.



Photo 19. View of fin and erosion repairs on northwest side of disposal cell.



Photo 20. Location of small willow tree in the northwest fin.



Photo 21. South side perimeter road, guardrail, and apron.



Photo 22. Cell access ramp.



Photo 23. LCRS support building.



Photo 24. Erosion on north side of chemical plant inside buffer zone; buffer zone pin location indicated by flags.



Photo 25. Erosion repair on north side of chemical plant property.



Photo 26. Repairs of Army road erosion.



Photo 27. The platform and markers on the disposal cell.



Photo 28. Contact information sign on LCRS fence.



Photo 29. Monitoring well MW-2047 on Chemical Plant Property.

Appendix A
Inspection Agenda

2004 ANNUAL INSPECTION
AGENDA

Wednesday, November 17, 2004

8:30 – 9:00 am

Conference Room 3A planning meeting. Review agenda, inspection teams, and safe work issues. Review inspection report and findings on last year's inspection. Inspectors/observers divide into 2 separate groups to cover 5 transects each on the disposal cell. The Team Leaders will be Terri Uhlmeyer and Dick Johnson.

9:00 – 11:00 am

Disposal Cell Inspection – Potential settlement, rock degradation, vegetation
Team 1: Walk 5 transects
Team 2: Walk 5 transects

11:00 am – 12:30 pm

Lunch (on your own)

12:30 pm – 1:00 pm

Teams 1 & 2: reconvene in Room 3A for trip to LCRS. Briefing on LCRS and erosion control repairs.

1:00– 2:30 pm

Inspection of LCRS (No confined space entry planned) and erosion control repairs.

2:30 – 3:30 pm

Document review (e.g., 2003 ASER, Quarterly FFA Reports, etc)
Paperwork review (e.g., telecoms & e-mails with surrounding property owners, DOE well abandonments and new wells, and documentation of no disturbance along the NPDES discharge pipeline, etc.)
Note: These review and contact activities will occur in advance of the inspection.

3:30 – 4:00 pm

Meeting in Room 3A: discuss Day 1 inspection results.

Thursday, November 18, 2004

8:30 – 9:00 am

Meeting in Room 3A to review next inspection objectives. Inspectors/observers will divide into 2 separate groups. Team 1 (Team Leader - Terri Uhlmeier) will cover the Chemical Plant Area. Team 2 (Team Leader – Dick Johnson) will cover the Southeast Drainage and the Quarry Area.

9:00 – 11:30 am

Team 1: Inspect land & shallow groundwater use on Army property and DOE property:

- Monitoring wells along Army property roads
- Drive all Army roads in proposed IC area and note any land disturbance
- Disposal Cell buffer zone
- Monitoring wells on DOE Chemical Plant property

Team 2: Inspect land & shallow groundwater use on Missouri Department of Conservation property, Weldon Spring Conservation Area:

- Southeast Drainage from Army Road to Hwy 94
- Hwy 94 culvert
- Southeast Drainage from Hwy 94 to Missouri River, including Springs 5303 & 5304

11:30 am – 1:00 pm

Lunch (On your own)

1:00 – 3:30 pm

Team 1: Inspect land & shallow groundwater use on Missouri Department of Conservation property, August A. Busch Conservation Area:

- Burgermeister Spring
- Spring 6303
- Monitoring wells along MDC roads
- Drive all MDC roads in proposed IC area and note any land disturbance
- Hwy D Culvert

Team 2: Inspect land & shallow groundwater use on Missouri Department of Conservation property, Weldon Spring Conservation Area and DOE property:

- DOE Quarry Property (Quarry rim wells)
- DOE Quarry Property (Quarry proper)
- Reduction zone area
- St. Charles County well field area

3:30 – 4:00 pm

Debriefing for DOE and Stoller management of preliminary inspection findings.

Appendix B
Inspection Checklist

Initial Annual Site Inspection Checklist

Purpose of the Checklist

This checklist has been developed from the EPA guidance document *Comprehensive Five Year Review Guidance* dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 2.3 of the *Long-Term Surveillance and Maintenance Plan for the Weldon Spring, Missouri, Site*. The checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually during the Weldon Spring Site annual surveillance and maintenance inspection. The checklist will also be used to assist in compiling information for the five-year review.

I. SITE INFORMATION	
Site name: DOE Weldon Spring Site	Date(s) of inspection: <u>Nov. 17-18, 2004</u>
Location: St. Charles, MO	EPA ID: MO6210022830
Agencies accompanying DOE for portions of the annual inspection: <input checked="" type="checkbox"/> EPA, Region 7 <input checked="" type="checkbox"/> MDNR <input checked="" type="checkbox"/> Other (list) <u>MDC, WSCC</u>	Weather: <u>11/17: Sunny, partly cloudy, warm 60's</u> <u>11/18: Cloudy, rainy, 60s</u>
Remedy Includes: Disposal Cell Institutional controls Monitored Natural Attenuation Long Term Monitoring Other _____	
Inspectors <u>Terri, Uhlmeier, Dick Johnson</u>	
Participants <u>Tom Pauling, Dan Wall, Steve Lang, Ben Moore, Randy Thompson, Clark Oberly, Greg Madley</u> ✱	
Attachments: <input type="checkbox"/> Inspection team roster attached (in report) <input type="checkbox"/> Site map attached (in report)	
II. INTERVIEWS (Check all that apply)	
1. Local Site Manager <u>Yvonne Deyo</u> <u>Site Lead, Stoller, Inc</u> <u>11/12/04</u> <small>Name Title Date</small> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>636-300-0012</u> Problems, suggestions; <input checked="" type="checkbox"/> Report attached <u>Appendix D</u>	
2. Environmental Data Manager <u>Randy Thompson</u> <u>Data Manager</u> <u>11/15/04</u> <small>Name Title Date</small> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>636-926-7040</u> Check to ensure that environmental data is reviewed and trended. Problems, suggestions; <input checked="" type="checkbox"/> Report attached <u>Appendix D</u>	

Participants continued:
 ✱ Tom Nelson, Nancy Dickens, Dede Aubuchon, John Vogel

3. **Other Staff (as applicable)** _____

	Name	Title	Date
--	------	-------	------

Interviewed at site at office by phone Phone no. _____

Problems, suggestions; Report attached _____

4. **Local response agencies:** Contact to notify of annual inspection and to determine if there are any concerns or issues.

Agency: **St. Charles County Sheriff**

Contact	<u>Jim Hudson</u>	<u>Lieutenant</u>	<u>12/13/04</u>	<u>636-949-3005</u>	<u>7235</u>
	Name	Title	Date	Phone no.	

Problems; suggestions; Report attached Also contacted Sheriff dispatch: Tina
on 11/10/04 and send the Sheriff's office an up to date contact list

Agency: **Cottleville Fire Department**

Contact	<u>Skip Gauldin</u>	<u>Asst. Fire Chief</u>	<u>11/9/04</u>	<u>636-447-6655</u>	<u>x 8704</u>
	Name	Title	Date	Phone no.	

Problems; suggestions; Report attached Sent them updated emergency contact
list.

Agency: **SimplexGrinnel (LCRS and Interpretive Center Alarm Company)**

Contact	<u>Stephanie</u>		<u>11/9/04</u>	<u>888-746-7539</u>	
	Name	Title	Date	Phone no.	

Problems; suggestions; Report attached Verified that they had up to date
emergency contact list w/ correct numbers

Agency **U.S. Geologic Survey National Earthquake Information Center**

Contact	_____	_____	_____	_____	
	Name	Title	Date	Phone no.	

Problems; suggestions; Report attached Stoller - GJ office is working on a
notification system with the USGS - National Earthquake Info Center

Agency _____

Contact	_____	_____	_____	_____	
	Name	Title	Date	Phone no.	

Problems; suggestions; Report attached _____

5. **Stakeholders:** Contact to notify of annual inspection and to determine if there are any concerns or issues.

Agency: Francis Howell ^{High}School District Contact Name: Ms. ^{Pam Sloan Principal} ~~Chad Brady, Chief Financial Officer~~
 Contact Name Current yes no
 Phone Number Current yes no _____ (new phone no. if applicable)

Contact Pam Sloan Principal 11/5/04 851-4700 x 1840
 Name (if different than above) Title Date Phone no.

Problems; suggestions; Report attached email notification, received no response.
Also left phone message + received no response

Agency: Weldon Spring Citizens Commission Contact Name: Helene Diller, Admin. Assistant
 Contact Name Current yes no
 Phone Number Current yes no _____ (new phone no. if applicable)

Contact _____ 636-926-7061
 Name (if different than above) Title Date Phone no.

Problems; suggestions; Report attached App.D

Other: St. Charles County
 Contact Mike Duwall Dir. of Env. Services 11/10/04 636-949-7583
 Name Title Date Phone no.

Problems; suggestions; Report attached App.D

6. **Other interviews** (Prior to inspection, determine if any citizens or groups have expressed any concerns or interests in the site. Check site email and Grand Junction contact phone logs) Report attached.

No other concerns or interests expressed.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **Documents**

Draft-Final LTS&M, Aug 2004
 Surveillance and Maintenance Plan Readily available Up to date N/A
 As-built drawings Disposal cell Readily available Up to date N/A
 Maintenance logs Readily available Up to date N/A

Remarks MDNR suggested the site keep a maintenance log for all site
Maintenance items

2.	Site-Specific Health and Safety Plan <i>April 2004</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> Contingency plan/emergency response plan	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks _____				
3.	Permits and Service Agreements	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> NPDES Permits	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> MSD agreement and records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Other permits _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
4.	Groundwater Monitoring Records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks _____				
5.	Leachate Records	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks _____				
6.	Interpretative Center Sign-In Logs	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks _____				
IV. O&M COSTS				
1.	Organization			
	<input type="checkbox"/> DOE <input checked="" type="checkbox"/> Contractor for DOE			
	<input type="checkbox"/> Other participants (list organizations) _____			
	<i>Other Participants costs for 2004: \$ 173,889</i>			
2.	O&M Cost Records (This information may be reviewed and completed prior to the inspection)			
	Original O&M cost estimate <i>2004 Budget: \$1,449,928</i> <input type="checkbox"/> Breakdown attached			
	Total annual cost for prior federal fiscal year:			
	From _____	To <i>FY 2004 Actual: \$1,411,383</i>	<input type="checkbox"/> Breakdown attached	
	Date	Date	Total cost	
3.	Unanticipated or Unusually High O&M Costs During Review Period			
	Describe costs and reasons:			
	<i>The LTS&M estimates with and costs will be adjusted to take into consideration any additional costs that are determined to be representative of long term tasks. The site is still experiencing a ramp-down and the FY04 costs are higher than we expect for the future.</i>			

V. INSTITUTIONAL CONTROLS

Institutional Control (IC) Inspections

1. Land and Shallow Groundwater Use within the Chemical Plant Site and Quarry Property

Inspect for indications of excavations into soil or bedrock and groundwater withdrawal or use in restricted areas. If any party has been granted use of portions of the Chemical Plant or Quarry area, inspect to ensure that land use is in compliance with the terms of the restrictions within the notation.

Note any observations: No indications of excavations into soil or bedrock. No indications of groundwater withdrawal or use.

Erosion areas were noted north of the cell

2. Groundwater Use in Areas Surrounding the Chemical Plant

Groundwater use is restricted in areas. Inspect affected areas for evidence of groundwater or spring water use (Burgermeister Spring and Spring 6303). Inspect to ensure that land use continues to be in compliance with the terms of the license, easement, or permit and the restrictions contained therein.

Note any observations: Inspected relevant areas on Army + MDC properties. No evidence of gw or springwater use. No land use changes.

Checked for sampling of survey markers. Some could not be located.

3. Groundwater (Quarry)

Groundwater use is restricted in areas. Inspect affected areas for evidence of groundwater withdrawal or use in the area of impact. Inspect to ensure that land use continues to be in compliance with the terms of the license and the restrictions contained therein.

Note any observations: No evidence of groundwater withdrawal or use. No land use changes.

4. Land Use in Quarry Area Reduction Zone

A naturally occurring reduction zone exists in soil south of the Katy Trail and north of the Femme Osage Slough. Inspect for indications of excavations into soils and bedrock in the uranium reduction zone. Inspect to ensure that land use continues to be in compliance with the terms of the easement and the restrictions contained therein.

Note any observations: No indications of excavations into soils or bedrock. No land use changes.

5. Southeast Drainage

Check for indications of residential use or construction in the Southeast Drainage (200-foot-wide corridor), or other activity that would indicate nonrecreational use of the area. Check Springs 5303 and 5304 for residential, commercial, or agricultural use of spring water.

Note any observations: No indications of residential use or construction in the SE Drainage or other activity that would indicate nonrecreational use. No indications of use of spring water.

6. **Highway D Culvert**

Check for signs of disturbance of the affected region where the Frog Pong outlet culverts pass beneath Highway D and in the utility rights-of-way in the affected area.

Note any observations: As observed during 2003 inspection, the ditch between the Hwy and culverts has eroded, exposing the top of the culverts.

7. **State Route 94 Culvert**

Check for signs of disturbance of the affected region where the culvert passes beneath State Route 94 and in the utility rights-of-way in the affected area.

Note any observations: Essentially unchanged from 2003 inspection. The upstream end was substantially blocked with debris and erosion had occurred on the embankment. The downstream end was corroded and the last section of pipe was partially separated from the rest of the culvert.

8. **Pipeline from LCRS to Missouri River**

Inspect the entire length of the pipeline and outfall for any disturbances or maintenance needs.

Note any observations: Inspected on 11/8/04 + documented by LOC. Pipeline area not disturbed + intact. Discharge structure also intact. The 4 man holes were located + marked w/ corresponding numbers. Manhole #1 overgrown w/ briars, Manhole #2 covered w/ dead tree branches + brush. Manholes 3+4 clear of obstructions.

C. Institutional Control Annual Contact Log

In accordance with the LTS Plan, the following will be contacted to verify cognizance of institutional controls and real estate agreements. Fill in all that apply.

1. **Agency:** Missouri Department of Conservation **Contact Name:** Joel Porath, Wildlife Regional Supv.
Address: August A. Busch Memorial Conservation Area, 2360 Highway D, St. Charles, MO 63304
Institutional Control and Real Estate Licenses to Verify: Chemical Plant Groundwater Use Restriction, Quarry Area Groundwater Use Restriction, Quarry Reduction Zone Land Use Restriction, Southeast Drainage Residential Use Restriction, Missouri State Highway 94 Culvert, Hwy D Culverts, North Gate Access, Blanket Well Installation and Sampling Agreement, Effluent Discharge Pipeline, Hamburg Trail Use Agreement.

Contact Name Current yes no

Phone Number Current yes no _____ (new phone no. if applicable)

Contact same same 11/10/04 636-441-4554
Name (if different than above) Title Date Phone no.

Problems; suggestions; Report attached App D

Also contacted John Vogel, Area Manager, on 11/5/04 at 636-441-4554

2. **Agency:** Missouri Department of Conservation **Contact Name:** Don Schulteheinrich, Realty Spec.
Address: P.O. Box 180, Jefferson City, MO 65102
Institutional Control and Real Estate Licenses to Verify: See No. 1

Contact Name Current yes no

Phone Number Current yes no _____ (new phone no. if applicable)

Contact Cynthia Green _____ 11/29/04 573-751-4115
Name (if different than above) Title Date Phone no.

Problems; suggestions; Report attached App D

3. **Agency:** Missouri Department of Natural Resources **Contact Name:** Lori Huber, Parks Operation Off.
Address: P.O. Box 176, Jefferson City, MO 65102
Institutional Controls and Real Estate Licenses to Verify: Quarry Area Groundwater Use Restriction, Quarry Reduction Zone Land Use Restriction, Southeast Drainage Residential Use Restriction, Blanket Groundwater Well Sampling Access Agreement, Effluent Discharge Pipeline

Contact Name Current yes no

Phone Number Current yes no 573-751-7987 (new phone no. if applicable)

Contact Jennifer Frazier _____ 11/16/04 573-751-5374
Name (if different than above) Title Date Phone no.

Problems; suggestions; Report attached App D

4. **Agency:** Missouri Department of Transportation **Contact Name:** Ed Warhol, Bldg and Grounds Spec.
Address: 1590 Woodlake Dr., Chesterfield, MO 63017
Institutional Controls to and Real Estate Licenses to Verify: Chemical Plant Groundwater Use Restriction, Missouri State Highway 94 Culvert, Highway D Culverts

Contact Name Current yes no

Phone Number Current yes no _____ (new phone no. if applicable)

Contact _____ 314-340-4250
Name (if different than above) Title Date Phone no.

Problems; suggestions; Report attached A

Contacted Don Wichern

5. **Agency:** Missouri Department of Transportation **Contact Name:** Don Wichern, Asst. District Engineer
Address: 1590 Woodlake Dr., Chesterfield, MO 63017
Institutional Controls to and Real Estate Licenses to Verify: Chemical Plant Groundwater Use Restriction, Missouri State Highway 94 Culvert, Highway D Culverts
 Contact Name Current yes no
 Phone Number Current yes no _____ (new phone no. if applicable)

Contact Same same 12/3/04 314-340-4202
 Name (if different than above) Title Date Phone no.
 Problems; suggestions; Report attached App D

6. **Agency:** U.S. Dept. of Army **Contact Name:** Jerry Stubblefield, Facility Manager
Address: Weldon Spring Training Area, 7301 Hwy 94 S. St. Charles, MO 63304
Institutional Controls to and Real Estate Licenses to Verify: Chemical Plant Groundwater Use Restriction, Effluent Discharge Pipeline, Blanket Groundwater Well Sampling Access Agreement
 Contact Name Current yes no
 Phone Number Current yes no _____ (new phone no. if applicable)

Contact Ray Stevenson _____ 11/9/04 636-329-1200x21
 Name (if different than above) Title Date Phone no.
 Problems; suggestions; Report attached App D

Also contacted Christina Ostrander, Fort Leonard Wood,
573-596-0131 x 61016 (11/10/04)

7. **Agency:** St. Charles County Recorder of Deeds
Address: 201 N 2nd. St. Charles, MO 63301
Institutional Controls to and Real Estate Licenses to Verify: Deed Restrictions

Contact N/A N/A 12/13/04 636-949-7505
 Name Title Date Phone no.

Problems; suggestions; Report attached Terri Uhlmeier went to the St. Charles Co. Recorder of Deeds office on 12/13/04 and verified that the Notation of Land Ownership was filed. This was verified & it is filed in Book 3754 Page 419. This info can also be verified at www.saintcharlescounty.org

8. **Agency:** St. Charles County Planning and Zoning Department
Address: 201 N 2nd. St. Charles, MO 63301
Institutional Controls to and Real Estate Licenses to Verify: Awareness of Restrictions

Contact Wayne Anthony _____ 12/17/04 636-949-~~7235~~⁷⁹⁰⁰
 Name Title Date Phone no.

Problems; suggestions; Report attached App D. Mr. Anthony verified that there were no planning and zoning activities in the quarter mile surrounding the chemical plant and quarry properties

7221

General	
1.	Land Use Changes On Site <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Remarks _____ _____ _____
2.	Land Use Changes Off Site <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Remarks _____ _____ _____
VI. GENERAL SITE CONDITIONS	
1.	Roads <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate Remarks _____ _____ _____
2.	Vandalism <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism noted Remarks _____ _____ _____
3.	Personal Injury Risks <input checked="" type="checkbox"/> Housekeeping maintained Remarks _____ _____ _____
4.	Site Markers (Four Information Plaques on Top of Cell, Historical Markers, and Other Information Markers) <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Legible and Secure Remarks _____ _____ _____
5.	Guard Rail Around Cell <input checked="" type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Secure Remarks _____ _____ _____

6. **Stairs to Top of Cell** Location shown on site map
 Stairs in good condition Handrail stable and in good condition
 Remarks _____

7. **Other Site Conditions:**
 Remarks _____

VII. EROSION

1. **Chemical Plant Areas** Location shown on site map Erosion not evident
 Areal extent _____ Depth _____
 Remarks Erosion was noted on the north side of the
chemical plant property. Small area of erosion was
inside the buffer zone, next to a survey pin
Erosion areas noted during 2003 inspection were repaired

2. **Quarry Area** Location shown on site map Erosion not evident
 Areal extent _____ Depth _____
 Remarks _____

VIII. CHEMICAL PLANT DISPOSAL CELL

1. **Settlement/Bulges** Location shown on site map Settlement not evident
 Areal extent _____ Depth < 6"

A. Annually: Walk along the grade break at the top of the side slopes, around the cell perimeter, and along 10 random transects across the cell surface. Inspect for local depressions, regional departures from planar surfaces, and shifts in intersections (vertices) of cell surface planes. Inspect for vertical shear of the cover layers indicated by sudden, abrupt steps that exceed an approximately 6-inch change of surface level over no more than 10 feet distance.

B. During 5-Year Review Inspections (Beginning 2005 and at 5-year Intervals): Conduct an aerial mapping survey with a vertical resolution not less precise than 0.5 feet. Produce and record maps and survey data for the cell surface represented by 1.0 foot contour intervals. Evaluate the data for indications of settlement. Consider the position and spacing of contour lines as indications of elevation change and possible settlement.

Remarks Some minor depressions were observed.
They are shown on the inspection map.

2. **Rock Cover** Signs of degradation Signs of intrusion No signs of degradation

A. Annually: During settlement monitoring inspection also visually inspect for departures from original rock conditions or from the previous inspection. Note observable discoloration on areas larger than 2,500 square feet, presence of finer materials at surface and apparent rock gradation changes. Document rock conditions annually with photographs.

B. During 5-Year Review Inspections (Beginning 2005 and at 5-year Intervals): Inspect cell cover for gradation changes by walking 10 randomly spaced transects across the cell. Concentrations of degraded, split, or weathered pieces of limestone will be mapped, photodocumented and visually assessed as a percentage of rock exposed within each mapped area. If degraded rock is evenly distributed, inspectors will estimate the overall percentage of degraded rock. If the amount of degraded rock appears to be increasing, based on a review of previous annual rock quality assessments, additional monitoring or gradation testing will be performed. If rock does not appear degraded, photodocumentation of several GPS located areas will establish rock conditions for future reference.

Remarks _____

3. **Vegetative Growth** Weeds Plants
 Trees/Shrubs

Remarks Approximately 5% weeds were found on the
cell

4.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <i>N/A</i> <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps Remarks _____ _____ _____	<input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
5.	Toe/Apron Drains <input checked="" type="checkbox"/> Proper drainage <input type="checkbox"/> Silting <input type="checkbox"/> Evidence of erosion Remarks _____ _____ _____	
6.	Slope Instability <input checked="" type="checkbox"/> Slides <input checked="" type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks <i>A potential minor slide rock slippage was identified on the north west side of the cell.</i> _____ _____	
7.	Leachate Collection and Removal System <input checked="" type="checkbox"/> Fence/Gates/Locks in good condition <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> LCRS flow rates <input checked="" type="checkbox"/> Flow rate issues <input checked="" type="checkbox"/> Review data trending and Action Leakage Rate review <input checked="" type="checkbox"/> Sump Containment System (Burrito) flow rates <input checked="" type="checkbox"/> Burrito flow rate issues <input type="checkbox"/> Alarm system functioning <input type="checkbox"/> Methane Detection System functioning <input checked="" type="checkbox"/> Compliance with MSD Agreement <input checked="" type="checkbox"/> Review shipping records <input type="checkbox"/> Check alarm records (note any issues) Remarks <i>Have removed alarms and methane detection system.</i> _____ _____ _____	
8.	Condition of 300 Ft. Buffer Zone <input checked="" type="checkbox"/> Evidence of erosion (shown on map) <i>small area</i> <input type="checkbox"/> Vegetative growth of woody species (show location) Remarks <i>Small area of erosion inside buffer zone. Survey pin WS34P is threatened to be washed out.</i> _____ _____	
9.	Condition of Prairie <input checked="" type="checkbox"/> Evidence of erosion (shown on map) <input checked="" type="checkbox"/> Vegetative growth of woody species (show location) Remarks <i>Erosion on north side. Willow tree noted at end of NW fin.</i> _____ _____	
IX. GROUNDWATER MONITORING		
1.	Disposal Cell Monitor Well Network <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Sampled in accordance with LTS&M Plan <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of surface water infiltration at casing <input type="checkbox"/> Needs maintenance <input checked="" type="checkbox"/> Proper ID on each well <input checked="" type="checkbox"/> Acceptable quality of data <input type="checkbox"/> Any issues with data trends (See Section II.2) Remarks _____ _____ _____	

2. **Chemical Plant Groundwater Monitor Well Network**
 Properly secured/locked Functioning Sampled in accordance with LTS&M Plan
 Good condition Evidence of surface water infiltration at casing Needs maintenance
 Acceptable quality of data Any issues with data trends (see Section II.2)
 List wells checked by number (> 10% of wells) 2006, 2012, 2013, 2017, 2023,
2024, 2034, 2045, 2053, 2054, 3024, 3025, 3026, 3027, 3040, 4011, 4023,
4026, 4027, 4028, 4029, 4030, 4034, 4038, 4039, 4040, 4041, 1004, 1005, 1006, 1007,
 Remarks MU-4030 + 4039 were faded
MW-1026: needs ID number

3. **Quarry Monitor Well Network**
 Properly secured/locked Functioning Sampled in accordance with LTS&M Plan
 Good condition Evidence of surface water infiltration at casing Needs maintenance
 Acceptable quality of data Any issues with data trends (see Section II.2)
 List wells checked by number (> 10% of wells) 1002, 1004, 1005, 1006, 1007, 1008, 1009, 1015,
1014, 1015, 1016, 1028, 1030, 1031, 1032, 1045, 1046, 1047, 1048,
1049, 1051
 Remarks _____

X. OVERALL OBSERVATIONS

A. Implementation of the Remedies

Describe issues and observations relating to whether the remedies are effective and functioning as designed.

The remedies are effective and functioning as designed

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedies.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of one or more of the remedies may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedies.

ASA = Asbestos Storage Area
CMSA = Construction Material Staging Area
GCL = Geosynthetic Clay Liner
MSA = Material Staging Area

Appendix C
LCRS Data

Table C-1. 2002 MSD Hauled Leachate Data

Parameter	Units	Batch # Date Hauled MSD Limit	Reporting period											
			L001	L002	L003	L004	L005	L006	L007	L008	L009	L010	L011	L012
			4-Feb-02	8-Mar-02	5-Apr-02	8-May-02	17-Jun-02	16-Jul-02	6-Aug-02	6-Sep-02	3-Oct-02	31-Oct-02	14-Nov-02	13-Dec-02
Total Volume	gallons	15,000 gal/mo	10,000	11,168	8,557	10,981	11,387	8388	5601	9291	8524	7370	3004	9016
COD	mg/L	Monitor	27	34	26	24	15	26	36	36	28	25	25	33
TSS	mg/L	Monitor	45	28	16	12	45	53	47	68	48	50	47	12
Arsenic	mg/L	Monitor	0.0015	ND (0.0012)	ND (0.0024)	ND (0.010)	0.004	0.0032	0.0067	0.0086	0.0084	ND (0.0100)	ND (0.010)	ND (0.010)
Barium	mg/L	Monitor	0.592	0.509	0.554	0.511	0.815	0.844	0.407	1.09	1.03	1.03	1.07	0.743
Copper	mg/L	Monitor	ND (0.0054)	ND (0.0014)	ND (0.0019)	0.0074	0.0033	0.0048	ND (0.0077)	ND (0.0077)	ND (0.0077)	ND (0.0250)	ND (0.025)	ND (0.025)
Iron	mg/L	Monitor	14.1	10.1	5.68	5.01	19.4	13.2	17.3	27.9	21.7	23.8	21	4.54
Lead	mg/L	Monitor	ND (0.00099)	ND (0.00099)	ND (0.0021)	ND (0.003)	ND (0.0021)	ND (0.003)	ND (0.0016)	ND (0.0016)	ND (0.0016)	ND (0.0030)	ND (0.003)	ND (0.003)
Chromium	mg/L	Monitor	ND (0.00073)	ND (0.00073)	ND(0.0013)	ND (0.010)	ND (0.013)	ND (0.010)	ND (0.0020)	ND (0.0020)	ND (0.002)	ND (0.0100)	ND (0.010)	ND (0.010)
Mercury	mg/L	Monitor	ND (0.00010)	ND (0.000.10)	ND (0.00010)	ND (0.0002)	ND (0.00010)	0.00046	0.00018	ND (0.00010)	ND (0.0001)	ND (0.0020)	ND (0.0002)	ND (0.0002)
Nickel	mg/L	Monitor	0.0107	0.0104	0.0069	0.0087	0.0109	0.0094	ND (0.0120)	ND (0.0120)	ND (0.0120)	ND (0.0400)	ND (0.040)	ND (0.040)
Selenium	mg/L	Monitor	ND (0.0012)	ND (0.0012)	ND (0.0022)	ND (0.005)	ND (0.0022)	ND (0.005)	ND (0.0012)	ND (1.0012)	ND (0.0012)	ND (0.0050)	ND (0.005)	ND (0.0005)
Silver	mg/L	Monitor	ND (0.0070)	ND (0.0017)	ND (0.001)	ND (0.010)	ND (0.0010)	ND (0.0010)	ND (0.0060)	ND (0.0060)	ND (0.0060)	ND (1.0100)	ND (0.010)	ND (0.010)
Zinc	mg/L	Monitor	0.0277	0.0193	0.0126	0.0103	0.0109	0.0197	0.0054	0.0088	0.022	ND (0.0200)	ND (0.020)	ND (0.020)
VOA's	ug/L	Monitor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gross Alpha	pCi/L	Monitor	57.2 ± 10.0	55.8 ± 5.50	66.7 ± 5.84	64.9 ± 7.69	34.6 ± 4.70	37.7 ± 4.75	62.3 ± 11.2	28.1 ± 3.46	25.8 ± 2.91	16.8 ± 2.16	30.0 ± 3.17	39.9 ± 3.7
Uranium, Total	pCi/L	3000	46.8 ± 0.515	55.7 ± 0.076	57.3	34.0 ± 0.393	40.3 ± 0.745	33.4 ± 0.472	33.9 ± 0.839	31.1 ± 0.765	27.8 ± 0.684	16.0 ± 0.179	40.2 ± 0.567	32.09 ± 0.437
Uranium, Total Filtered	pCi/L	Monitor	47.5 ± 0.525	53.5 ± 0.562	56.3	38.9 ± 4.5	40.9 ± 0.751	35.5 ± 0.435	34.3 ± 0.846	31.0 ± 0.765	29 ± 0.724	18.4 ± 0.203	41.0 ± 0.578	30.3 ± 0.391
Thorium - 228	pCi/L	2000	0.336 ± 0.153	ND(0.291)	0.009 ± 0.102	ND(0.263)	0.040 ± 0.064	0.123 ± 0.133	ND (0.178)	ND (0.146)	ND (0.202)	ND (0.425)	ND (0.132)	ND (0.203)
Thorium - 230	pCi/L	1000	ND(0.620)	0.081 ± 0.113	0.326 ± 0.183	0.269 ± 0.150	ND(0.412)	0.148 ± 0.186	ND (0.318)	ND (0.360)	ND (0.511)	ND (0.780)	ND (0.392)	ND (0.268)
Thorium - 232	pCi/L	250	0.246 ± 0.122	0.051 ± 0.087	0.068 ± 0.085	ND(0.148)	0.060 ± 0.067	0.170 ± 0.129	ND (0.087)	ND (0.143)	ND (0.206)	ND (0.384)	ND (0.132)	ND (0.186)
Radium - 226	pCi/L	10	0.073 ± 0.286	0.162 ± 0.150	0.329 ± 0.265	0.315 ± 0.131	0.195 ± 0.127	0.112 ± 0.095	0.454 ± 0.138	0.497 ± 0.201	0.511 ± 0.169	0.506 ± 0.136	0.430 ± 0.198	0.248 ± 0.132
Radium - 228	pCi/L	30	0.455 ± 0.043	0.635 ± 0.068	0.809 ± 0.046	1.37 ± 0.050	1.31 ± 0.045	0.77 ± 0.047	ND (0.469)	ND (0.469)	ND (0.469)	ND (0.133)	ND (0.133)	1.81 ± 0.050
Americium - 241	pCi/L	150	ND (0.245)	ND(0.749)	ND(0.378)	0.223 ± 0.123	0.063 ± 0.166	0.105 ± 0.093	0.231 ± 0.152	ND (0.233)	ND (0.0879)	ND (0.259)	ND (0.389)	ND (0.332)
Neptunium - 237	pCi/L	150	0.035 ± 0.109	0.755 ± 0.246	0.131 ± 0.098	ND(0.083)	0.157 ± 0.083	0.007 ± 0.075	ND (0.271)	1.01 ± 0.285	ND (0.146)	ND (0.175)	0.882 ± 0.321	0.728 ± 0.202
Plutonium - 238	pCi/L	200	0.077 ± 0.163	ND (0.171)	0.064 ± 0.062	0.058 ± 0.065	0.050 ± 0.084	0.007 ± 0.075	ND (0.343)	ND (0.213)	ND (0.273)	ND (0.645)	ND (0.232)	ND (0.445)
Plutonium - 239/240	pCi/L	150	0.086 ± 0.101	0.975 ± 0.454	0.157 ± 0.073	0.058 ± 0.053	0.054 ± 0.050	0.029 ± 0.054	ND (0.137)	ND (0.246)	ND (0.315)	ND (0.645)	ND (0.307)	ND (0.225)
Technetium - 99	pCi/L	6000	0.770 ± 0.461	0.169 ± 0.240	ND(0.626)	0.523 ± 0.642	0.411 ± 0.487	0.122 ± 0.546	ND (1.42)	ND (1.83)	1.18 ± 0.717	1.33 ± 0.739	ND (1.66)	ND (1.77)

mg/L = milligrams per liter; pCi/L = picocuries per liter; ug/L = micrograms per liter

MSD = Metropolitan St. Louis Sewer District

ND = Not Detected

() = Detection Limit

Table C-2. 2003 MSD Hauled Leachate Data

Parameter	Units	Batch # Date Hauled MSD Limit	Reporting period									
			L013	L014	L015	L016	L017	L018	L019	L020	L021	L022
			21-Jan-03	3-Mar-03	1-Apr-03	5-May-03	11-Jun-03	16-Jul-03	26-Aug-03	6-Oct-03	13-Nov-03	18-Dec-03
Leachate Volume	gallons	15,000 gal/mo	9,683	8,802	8,887	8,656	8,617	8897	9895	9000	8878	7757
Purge Water Volume	gallons	Combined Total	0	0	0	0	101	0	107	0	88.6	0
COD	mg/L	Monitor	21	31	29	28	20	23	20	33	30	44
TSS	mg/L	Monitor	16	38.8	22	21.2	15.7	32.8	25.5	39.5	42.5	34
Arsenic	mg/L	Monitor	ND (0.010)	0.0043	0.0018	0.0024	0.0015	0.0038	0.0036	0.0075	0.004	ND (0.010)
Barium	mg/L	Monitor	0.803	0.975	0.829	0.811	0.784	0.996	1	1.15	1.16	1.03
Copper	mg/L	Monitor	ND (0.025)	0.0019	0.0373	0.0148	0.0013	0.0013	0.001	0..17	ND (0.000556)	ND (0.010)
Iron	mg/L	Monitor	6.51	18.4	10	10.7	6.14	15.2	12.6	20.5	21.6	14.2
Lead	mg/L	Monitor	ND (0.003)	ND (0.000111)	ND (0.000111)	0.00019	ND (0.000111)	0.00087	0.00013	0..0019	0.00048	ND (0.003)
Chromium	mg/L	Monitor	ND (0.010)	ND (0.000889)	ND (0.000889)	ND (0.00089)	ND (0.00089)	ND (0.00089)	ND (0.00089)	ND (0.556)	ND (0.000556)	ND (0.010)
Mercury	mg/L	Monitor	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0002)
Nickel	mg/L	Monitor	ND (0.040)	0.0082	0.0074	0.0063	0.0055	0.0082	0.0057	0.0059	0.0072	ND (0.010)
Selenium	mg/L	Monitor	ND (0.005)	0.00055	0.00067	0.00051	0.00057	0.00057	0.00042	0.00047	0.00056	ND (0.005)
Silver	mg/L	Monitor	ND (0.010)	ND (0.000111)	0.00052	0.00011	ND (0.00011)	0.0002	0.0003	ND (0.00011)	ND (0.000111)	ND (0.010)
Zinc	mg/L	Monitor	ND (0.020)	ND (0.00111)	0.0032	ND (0.00089)	ND (0.00089)	ND (0.00089)	0.0017	ND (0.00178)	ND (0.00178)	ND (0.020)
VOA's	ug/L	Monitor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gross Alpha	pCi/L	Monitor	31 ± 3.5	11.1 ± 6.93	14.7 ± 6.68	22.6 ± 6.89	9.48 ± 6.08	18.7 ± 9.38	11.5 ± 6.49	9.67 ± 3.69	7.76 ± 3.58	10.8 ± 5.7
Uranium, Total	pCi/L	3000	33.6 ± 0.373	36.3	31.8	30.6	25.6	25.2	21.4	21.4	17.5	13.9
Uranium, Total Filtered	pCi/L	Monitor	34.9 ± 0.397	*	*	*	*	*	*	*	*	*
Thorium - 228	pCi/L	2000	0.112 ± 0.061	ND (0.16)	ND ((0.176)	ND (0.083)	ND (0.102)	ND (0.041)	ND (0.013)	ND (0.177)	ND (0.133)	ND (0.41)
Thorium - 230	pCi/L	1000	ND(0.309)	0.205 ± 0.075	0.199 ± 0.077	0.148 ± 0.054	0.144 ± 0.054	0.181 ± 0.07	0.13 ± 0.059	0.161 ± 0.072	0.294 ± 0.083	ND (0.26)
Thorium - 232	pCi/L	250	ND (0.161)	ND (0.056)	ND (0.042)	ND (0.024)	ND (0.037)	ND (0.041)	ND (0.058)	ND (0.048)	ND (0.039)	ND (0.30)
Radium - 226	pCi/L	10	0.359 ± 0.148	0.59 ± 0.11	0.47 ± 0.11	0.39 ± 0.09	0.42 ± 0.1	0.26 ± 0.11	0.59 ± 0.12	0.75 ± 0.12	0.63 ± 0.11	0.60 ± 0.19
Radium - 228	pCi/L	30	ND (0.133)	1.28 ± 0.54	0.99 ± 0.5	ND (0.89)	ND (0.87)	ND (0.84)	ND (0.92)	0.97 ± 0.49	ND (0.78)	ND (0.98)
Americium - 241	pCi/L	150	ND (0.544)	**	**	**	**	**	**	**	**	**
Neptunium - 237	pCi/L	150	ND (0.248)	**	**	**	**	**	**	**	**	**
Plutonium - 238	pCi/L	200	0.330 ± 0.196	**	**	**	**	**	**	**	**	**
Plutonium - 239/240	pCi/L	150	ND (0.219)	**	**	**	**	**	**	**	**	**
Technetium - 99	pCi/L	6000	2.23 ± 0.943	**	**	**	**	**	**	**	**	**

mg/L = milligrams per liter; pCi/L = picocuries per liter; µg/L = micrograms per liter

MSD = Metropolitan St. Louis Sewer District

ND = Not Detected

() = Detection Limit

*Batch Monitoring Requirement Revised to Annual Monitoring by MSD

**No Longer Required

Table C-3. 2004 MSD Hauled Leachate Data

		Reporting period						
		Batch #	L023	L024	L025	L026	L027	L028
		Date Hauled	29-Jan-04	10-Mar-04	22-Apr-04	7-Jun-04	19-Jul-04	15-Sep-04
Parameter	Units	MSD Limit						
Leachate Volume	gallons	15,000 gal/mo	9,076	8,828	8,940	8,736	8,760	11,630
Purge Water Volume	gallons	Combined Total	0	0	0	206	75	41.8
COD	mg/L	Monitor	35	26	32	31	22	15
TSS	mg/L	Monitor	22	12	30	4	23	14
Arsenic	mg/L	Monitor	ND (0.010)	0.004				
Barium	mg/L	Monitor	1.01	0.883	0.991	0.859	1.1	0.812
Copper	mg/L	Monitor	ND (0.010)					
Iron	mg/L	Monitor	11.7	6.9	10.6	2.82	12.9	4.8
Lead	mg/L	Monitor	ND (0.003)	ND (0.002)				
Chromium	mg/L	Monitor	ND (0.010)					
Mercury	mg/L	Monitor	ND (0.002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0001)
Nickel	mg/L	Monitor	0.0101	ND (0.010)				
Selenium	mg/L	Monitor	ND (0.005)					
Silver	mg/L	Monitor	ND (0.010)					
Zinc	mg/L	Monitor	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.02)	ND (0.020)
VOA's	ug/L	Monitor	ND	ND	ND	ND	ND	**
Gross Alpha	pCi/L	Monitor	11.5 ± 5.3	16.8 ± 8.1	23.3 ± 9.8	22 ± 10	22 ± 12	ND (5.7)
Uranium, Total	pCi/L	3000***	13.94	17.41	16.66	25.704	22.9	ND (6.8)
Uranium, Total Filtered	pCi/L	Monitor	13.06	*	*	*	*	*
Thorium - 228	pCi/L	2000	ND (0.29)	ND (0.30)	ND (0.19)	ND (0.067)	ND (0.30)	ND (0.13)
Thorium - 230	pCi/L	1000	0.38 ± 0.22	0.29 ± 0.19	0.22 ± 0.16	0.34 ± 0.19	0.36 ± 0.2	0.17 ± 0.13
Thorium - 232	pCi/L	250	ND (0.14)	ND (0.2)	ND (0.12)	ND (0.1)	0.11 ± 0.12	ND (0.090)
Radium - 226	pCi/L	10	0.52 ± 0.25	0.43 ± 0.18	0.69 ± 0.23	0.44 ± 0.16	0.42 ± 0.15	0.32 ± 0.19
Radium - 228	pCi/L	30	ND (0.84)	0.96 ± 0.46	ND (0.48)	ND (0.92)	0.87 ± 0.45	1.26 ± 0.45
Americium - 241	pCi/L	150	**	**	**	**	**	**
Neptunium - 237	pCi/L	150	**	**	**	**	**	**
Plutonium - 238	pCi/L	200	**	**	**	**	**	**
Plutonium - 239/240	pCi/L	150	**	**	**	**	**	**
Technetium - 99	pCi/L	6000	**	**	**	**	**	**

mg/L = milligrams per liter; pCi/L = picocuries per liter; ug/L = micrograms per liter

MSD = Metropolitan St. Louis Sewer District

ND = Not Detected

() = Detection Limit

*Batch Monitoring Requirement Revised to Annual Monitoring by MSD

**No Longer Required

***In September 2004, MSD instituted the drinking water standard of 20 pCi/L for the leachate.

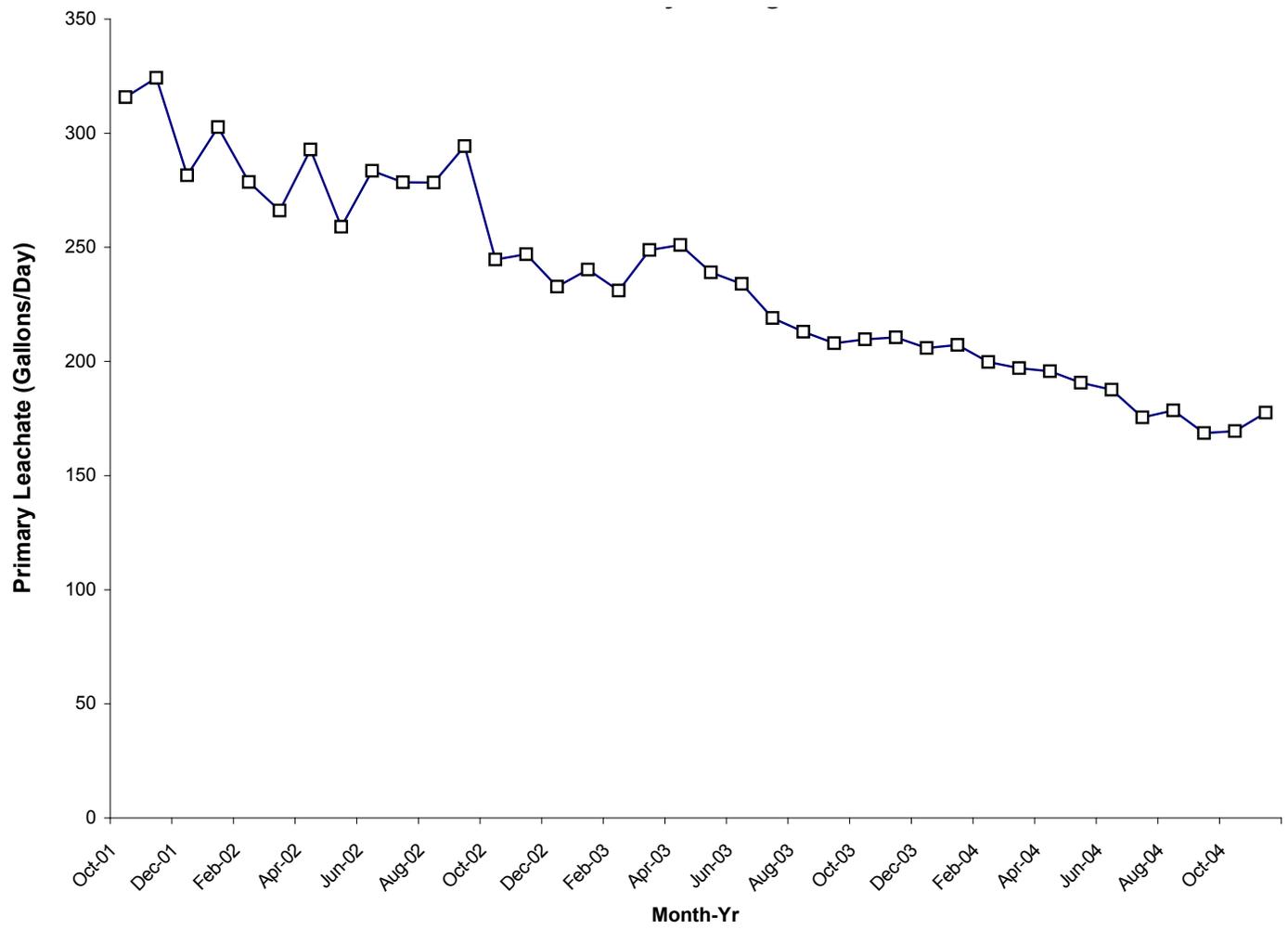


Figure C-1. Average Daily Rate of Primary Leachate Flow

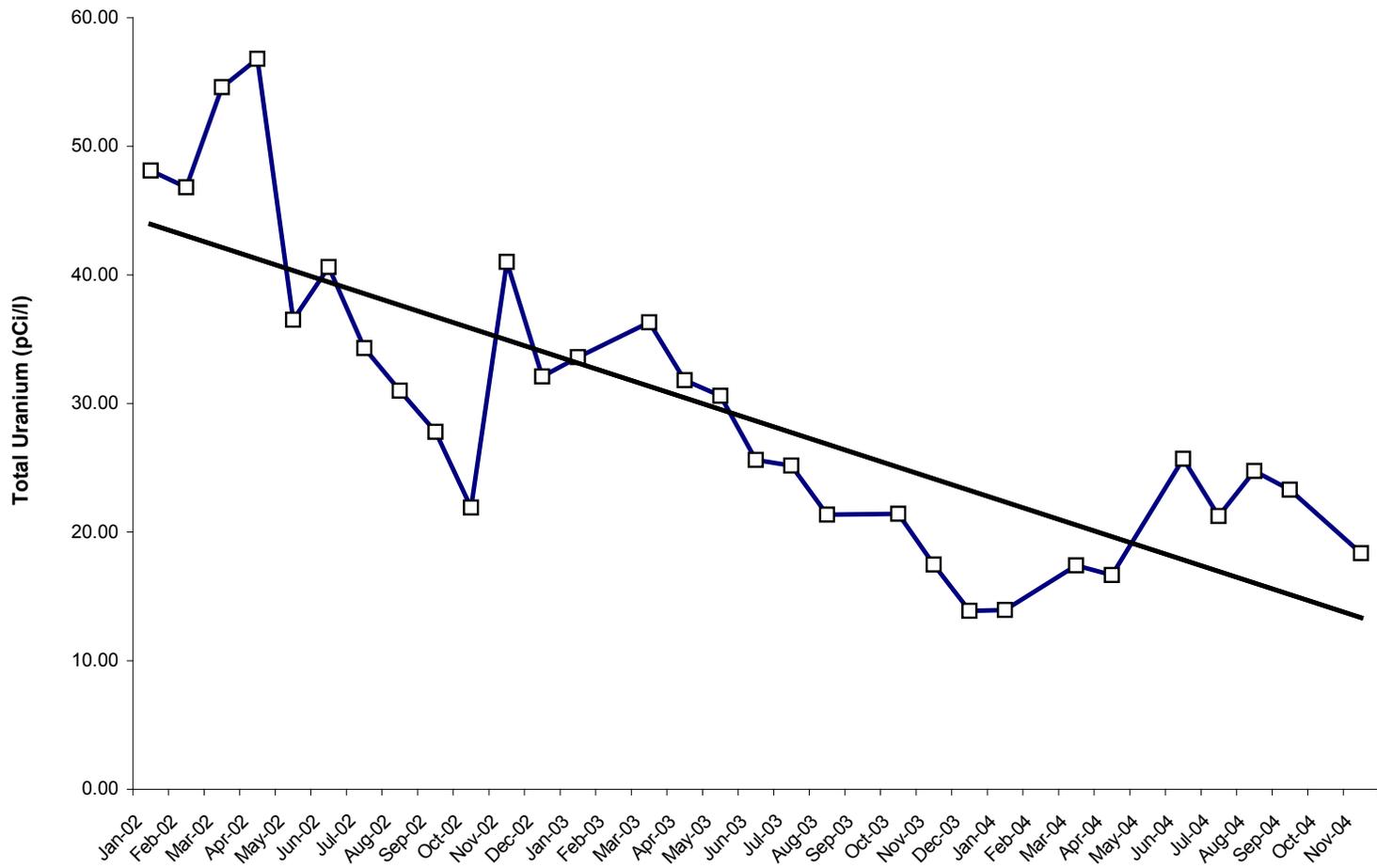


Figure C-2. Total Uranium Concentration in the Primary Leachate

Appendix D
Interviews and Contacts

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.:	
Subject: Annual Inspection		Time: 1:30 pm	Date: 11/12/04
Type: ___ Telephone <input checked="" type="checkbox"/> Visit ___ Other Location of Visit: Interpretive Center		___ Incoming ___ Outgoing	
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Yvonne Deyo	Title: Project Manager	Organization: SM Stoller, Inc.	
Telephone No: 636-300-0012		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I interviewed Yvonne Deyo, the SM Stoller Project Manager at the Weldon Spring Site. The interviewing of the Project Manager is a requirement included in the Annual Inspection Checklist. Most of the interview questions were from the CERCLA Five-year Review Guidance.</p> <ol style="list-style-type: none"> 1. Current Status of the Project: Long-term surveillance and maintenance and finalizing Groundwater operable unit issues. 2. Any problems encountered with the remedies? None at this time. 3. Are the remedies functioning as expected? Yes, although the groundwater remedy is being finalized. 4. Any vandalism or trespassing issues? Trespassing isn't any issue, since the site is publicly accessible, unless there is a lot of night use on the cell, which we haven't seen as yet. As public use of the site continues to rise, more site use issues will come up. We haven't really seen any vandalism besides minor moving of some of the rocks on top of the cell. 5. What is the current on-site presence? Describe staff and activities. There are 11 full-time and subcontractor employees and 7 part-time contractor and subcontractor employees. Activities include long-term surveillance and maintenance activities, data evaluation, operation of interpretive center, and finalization of remedial action documents including groundwater operable unit documents and the Long-Term Surveillance and Maintenance Plan. Also providing support on other DOE projects, such as Mound and Fernald. 6. Any suggestions or comments regarding annual inspection? None 			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 1:00	Date: 11/15/04
Type: ___ Telephone <input checked="" type="checkbox"/> Visit ___ Other		___ Incoming ___ Outgoing	
Location of Visit: Weldon Spring Site			

Contact Made By:

Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.
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Individual Contacted:

Name: Randy Thompson	Title: Data Manager	Organization: SM Stoller, Inc.
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Telephone No: 636-926-7040	Street Address: City, State, Zip:
Fax No: 636-447-0803	
E-Mail Address: rthompson@wssrap.com	

Summary Of Conversation

I interviewed Randy Thompson, Data Manager at the Weldon Spring Site. The interviewing of the data manager is a requirement included in the Annual Inspection Checklist.

1. **What is the current status of data validation/reporting?** Data validation has been completed for all data through July 2004. The data validation reports are somewhat behind, the last report issued was for March data. The April, May and June reports are near final and will be issued soon.
2. **How is the data reported?** After qualification flags are applied, the data is put on the website the next day. Monthly data validation reports are also prepared and the data is summarized in the annual environmental report.
3. **What is the current status of the data on the website? Are we meeting our 90 day commitment as stated in the LTSM?** The data completed through July 2004 are available online. We were behind this summer and early fall, but have since caught up and are meeting our 90-commitment
4. **Are there any trends that show contaminants increasing or decreasing?** Some wells are trending up and some are trending down. The monthly data validation reports discuss trends and a more thorough trend analysis is performed and documented in the annual environmental report.

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 3:00	Date: 12/13/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeier	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Jim Hudson	Title: Lieutenant	Organization: St. Charles County Sheriff Office	
Telephone No: 636-949-7325		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I had contacted the St. Charles County Sheriff's Office prior to the inspection and had spoken to the dispatcher's office (see telecon). During the inspection it was recommended that I speak to someone in the Sheriff's office. I contacted the St. Charles County Sheriff's Office again and spoke with Lieutenant Jim Hudson. I informed him of the LTS&M Annual Inspection and let them know that we intend to keep contact with them in this manner during each annual inspection. I asked him if he knew of any concerns or issues regarding the site and he did not know of any at this time. I told him that I had sent the dispatcher an updated emergency contact list and that he could always contact me with any issues. He told me I could also contact him with issues and during the annual inspection. He also informed me their office would be moving in the spring and he would contact me with his new number.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 2:00	Date: 11/10/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Tina	Title: Dispatcher	Organization: St. Charles County Sheriff Office	
Telephone No: 636-949-3005		Street Address:	
Fax No: 636-949-3049		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted the St. Charles County Sheriff's Office to notify them of the LTS&M Annual Inspection and to let them know that we intend to keep contact with them in this manner during each annual inspection. I asked them if they had an up-to-date emergency contact list for the site. They informed me of the contacts that they had listed and these individuals were no longer employed at the project. I told them I would fax them an up to date emergency list and included Grand-Junctions 24-hour Security number on the fax. I also asked them if they had any questions or concerns about the site and they did not.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 3:30	Date: 11/9/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeier	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Skip Gauldin	Title: Assistant Fire Chief	Organization: Cottleville Fire Dept	
Telephone No: 636-447-6655 ext. 8704		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Skip Gauldin of the Cottleville Fire Department and informed him that we would be conducting our long-term surveillance and maintenance annual inspection next week on November 17-18. I contacted Skip, because he had been a contact of our former DOE Safety manager and is familiar with the site. I told Skip this was more of a courtesy notification and we would be conducting this inspection every year and would use this call in the future to keep in contact with the Cottleville Fire Department and to find out if they have any concerns or issues. I asked him if he had a current emergency contact list and he did not think they did, so I told him I would send him a copy. He said if we ever needed any assistance to give them a call.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 2:50	Date: 11/9/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Stephanie	Title:	Organization: Simplex/Grinnell	
Telephone No: 888-746-7539	Street Address:		
Fax No:	City, State, Zip:		
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Simplex/Grinnell, the alarm company for the project, and talked to Stephanie. I verified that they had the correct three people as contacts and that they also had the correct work, home and cell number for each person.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 10:30	Date: 1/10/05
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Pat Houlahan	Title: Executive Director of Admin Services	Organization: Francis Howell School District	
Telephone No: 636-851-4046		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I had received a message from Pam Sloan, Principal of Francis Howell High School, in response to a message that I had left her, stating that she would not be back in the office until January 15, and suggesting that I contact Pat Houlahan, Executive Director of Administrative Services for the school district. I contacted Mr. Houlahan on January 10, 2005 and explained that we would be conducting an annual Long-Term Surveillance and Maintenance inspection each year and as part of the inspection we would be contacting certain stakeholders, such as the school district to maintain contact with them and to determine if they had any concerns or issues about the site. I informed Mr. Houlahan that the inspection had been conducted in November and the report would be issued soon. I also informed him that we would be holding a public meeting regarding the inspection. He said he did not know of any concerns at this time and requested that his name be added to the distribution list for the report and the meeting. I told him to contact us if he had any concerns or issues regarding the report.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 10:00	Date: 11/9/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Helene Diller	Title: Administrative Asst.	Organization: WSCC	
Telephone No: 636-300-0037		Street Address: 7295 Hwy. 94 South	
Fax No:		City, State, Zip: St. Charles, MO 63304	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Helene Diller, the administrative assistant for the Weldon Spring Citizens Commission, to officially notify her of the annual inspection to take place on November 17 and 18. Helene and the commission had been notified of the dates approximately 30 days ago.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 3:00	Date: 11/10/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Mike Duvall	Title: Director, Env. Services	Organization: St. Charles County	
Telephone No: 636-949-7583		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Mike Duvall, Director of Environmental Services for St. Charles County and left him a message officially notifying him of the LTS&M annual inspection which would take place on November 17 and 18. He had been notified of the inspection previously by Tom Pauling.</p> <p>The County is not included on any notification list for the inspection and should be included as a contact in the next revision.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 2:40	Date: 11/10/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Joel Porath	Title: Wildlife Regional Supv.	Organization: MDC	
Telephone No: 636-441-4554		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Joel Porath and notified him of the LTS&M annual inspection on November 17 and 18 and informed him that one requirement of the inspection was to notify the institutional control contacts for the site and to verify cognizance of the institutional controls that were in place. I stated that for now we also wanted to verify ICs that we had planned for the future, which we briefly discussed. He informed me that the MDC would be having a managed deer hunt on November 15-17. I told him that we had discussed this with John Vogel and that we planned to do the MDC inspection items on November 18. I also told him that we had been keeping John informed of the inspection and that he would be participating in portions of the inspection.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 1:45 pm	Date: 11/5/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit: Weldon Spring Site			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: John Vogel	Title: Area Manager	Organization: MDC	
Telephone No: 636-441-4554		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted John Vogel, to notify him of the annual inspection that was going to take place on November 17 and 18, 2004. He had previously been notified of this date approximately 30 days ago. I also told him that I had emailed him an agenda of the inspection, since he had participated in part of the inspection the previous year. He said he would like to participate in the inspection of the Southeast Drainage area again this year. I discussed the status of our current and pending institutional controls with MDC. The current agreement consists of our sampling access agreement and pending consists of the groundwater restriction agreement we have been negotiating. I asked John if he knew of any land or groundwater use in the planned gw restriction area that had taken place that would affect the future institutional controls in that area and he stated that there had not been any of this activity. I asked him if he knew if any of this type of activity would take place within in the next 12 months and he stated that it would not.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 1:00	Date: 11/29/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Cynthia Green	Title:	Organization: MDC	
Telephone No: 314-751-4115	Fax No:	Street Address:	
E-Mail Address:		City, State, Zip:	
Summary Of Conversation			
<p>I contacted Cynthia Green and discussed the LTS&M annual inspection, which was held on November 17 and 18. I had tried several times prior to and after the inspection to reach Cynthia, but had ended up leaving her a message prior to the inspection. I informed her that one requirement of the inspection was to touch base with the institutional contacts for the site and to verify cognizance of the institutional controls that were in place. I noted that since most of the ICs are not yet in place, we were making the annual contact as a formality and to keep in touch with the IC contacts. We discussed the agreement that was in place for sampling monitoring wells and also discussed the status of the pending institutional controls.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 11:15	Date: 11/16/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeier	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Jennifer Frazier	Title:	Organization: MDNR-Parks	
Telephone No: 573-751-7987	Street Address:		
Fax No:	City, State, Zip:		
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Jennifer Frazier, MDNR-Parks and notified her of the LTS&M annual inspection on November 17 and 18. I informed her that one requirement of the inspection was to touch base with the institutional control contacts for the site and to verify cognizance of the institutional controls that were in place. I noted that since most of the ICs are not yet in place, we were making the annual contact as a formality and to keep in touch with the IC contacts. Jennifer stated that as far as negotiation of ICs is concerned that Parks still has the concerns that they recently addressed in correspondence with DOE, including worker safety, etc.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 1:00	Date: 12/3/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Don Wichern	Title: Asst. District Engineer	Organization: MoDOT	
Telephone No: 314-340-4202		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I had attempted to get in contact with Don Wichern by phone for a couple weeks. I sent him an email on 12/2/04 which contained photos of the culverts and included a discussion of the inspection and that we plan to annually contact MoDOT to verify cognizance of institutional controls, which in the case of MoDOT mainly concerns the culverts at Hwy D and Hwy 94 and the groundwater restricted area on the Hwy 94 MoDOT property. The email also reminded Mr. Wichern that in regards to the culverts, MoDOT needs to notify us if they plan to conduct any type of excavation or removal of the culverts. Mr. Wichern replied to the email on 12/3 and asked that if MoDOT plans to remove any of the debris around the Hwy 94 culvert will that require them to notify us. I contacted him by phone on that date and informed him that if they were just removing the debris we would appreciate being notified so we would know what was going on with the culverts, but we would not need to be present or conduct any evaluations if they are simply clearing the debris and maybe recontouring or otherwise correcting the erosion. The Hwy 94 culvert contamination is fixed contamination on the inside of the culvert. We do need to be notified if they decide to remove some or the entire culvert.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 2:20	Date: 11/9/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Roy Stevenson	Title:	Organization: Army	
Telephone No: 636-329-1200	Fax No:	Street Address:	
E-Mail Address:		City, State, Zip:	
Summary Of Conversation			
<p>I contacted the main number at the Weldon Spring Army site and made contact with Roy Stevenson. I asked if Jerry Stubblefield was available and he stated that Jerry had been activated and that he was his replacement. I identified myself and that I was calling as a representative of the DOE Weldon Spring site and notified Roy that we would be conducting our annual inspection next week on November 17 and 18 and would be driving around the Army property on November 18 to inspect our wells. He told me to check in at the gate and my contact would be Nelson Jones. I asked him if he was familiar with our work on institutional controls and he said he was somewhat familiar with it. I briefly discussed our current agreement for sampling monitoring wells on the Army property and that we were currently in negotiation for some type of agreement for groundwater restriction. I also checked to see if any land or groundwater use had changed that would affect the future institutional controls and he stated that no, they had not changed. No groundwater use wells had been drilled, etc. and there was no plan for these to change in the next 12 months.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 3:45 pm	Date: 11/10/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc	
Individual Contacted:			
Name: Christina Ostrander	Title: Realty	Organization: Army-Fort Leonard Wood	
Telephone No: 573-596-0131 x 61016		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Christina Ostrander of the Fort Leonard Wood Division of the Army and notified her of the LTS&M annual inspection on November 17 and 18. I informed her that one requirement of the inspection was to notify the institutional control contacts for the site and to verify cognizance of the institutional controls that were in place. I noted that since most of the ICs are not yet in place, we were making the annual contact as a formality and to keep in touch with the IC contacts. The IC issues were discussed and also the potential ownership change from Fort Leonard Wood to the 89th Reserves.</p>			

INTERVIEW RECORD

Site Name: Weldon Spring Site		EPA ID No.: MO6210022830	
Subject: Annual Inspection		Time: 2:00 pm	Date: 12/17/04
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Terri Uhlmeyer	Title: Compliance Manager	Organization: SM Stoller, Inc.	
Individual Contacted:			
Name: Wayne Anthony	Title:	Organization: St. Charles Planning and Zoning Department	
Telephone No: 636-949-7900 x7221		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>I contacted Wayne Anthony of the St. Charles Planning and Zoning Department. Mr. Anthony had been the project's previous contact in this department in regards to the county's master plan. I asked Mr. Anthony if there were any planning and zoning activities currently in the one-quarter mile surrounding the chemical plant and quarry properties. Mr. Anthony verified that there were not any such activities in this area at this time.</p>			