

**FIRST FIVE-YEAR REVIEW REPORT**



**FOR THE  
D.L. MUD, INC. SITE  
ABBEVILLE, VERMILION PARISH, LOUISIANA**

**SEPTEMBER 2003**

**FINAL**

**Prepared for**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
DALLAS, TEXAS**

**Prepared by**

**Tetra Tech EM Inc.  
Contract No. 68-W6-0037  
Work Assignment No. 934-FR-FE-06ZZ**

**FIRST FIVE-YEAR REVIEW REPORT FOR THE  
D.L. MUD, INC. SUPERFUND SITE  
ABBEVILLE, VERMILION PARISH, LOUISIANA**

This memorandum documents the U.S. Environmental Protection Agency's (EPA) approval of the First Five-Year Review Report for the D.L. Mud, Inc. (D.L. Mud) Superfund site.

**Summary of Five-Year Review Findings**

The EPA signed the Record of Decision (ROD) for the D.L. Mud site on September 22, 1994. A remedial action objective (RAO) was developed to aid in the development and screening of remedial action (RA) alternatives for the site. The RAO for the D.L. Mud site is as follows:

To eliminate or reduce identified and/or potential risks by preventing the ingestion of barium-contaminated soils and by reducing the potential for migration of contaminants from both surface and subsurface soils to the ground water.

The remedy selected in the ROD included the following three components:

- Establishing and enforcing land use and deed notices/restrictions on the property to eliminate the potential for ingestion of barium-contaminated surface soils by hypothetical future residents;
- Excavating and disposing of visually contaminated subsurface soil at an off-site disposal facility to eliminate the potential for migration of the contaminants into the ground water; and,
- Monitoring ground water to make certain that waste excavation actions are successful and that potential ground water degradation from residual surface soil contaminants does not occur.

The RA began in 1998 after approval of the remedial design/remedial action (RD/RA) work plan. The final inspection conducted on February 17, 1999, concluded that the selected remedy had been constructed and completed in accordance with the RD plans and specifications. The final closeout report for the D.L. Mud site was submitted in June 1999.

Consistent with the remedy selected in the ROD, RA activities included: (1) re-establishing locations of former impoundments that were identified during the remedial investigation; (2) excavating visually contaminated subsurface soil; (3) backfilling with off-site soils and unstained stockpiled soils that were confirmed clean through sampling; (4) demolishing a shed located on the northern portion of the site;

(5) transporting and disposing of stained soil, drums, and rubbish encountered during excavation of stained soil and debris from demolition and site cleanup activities; (6) grading the site; and, (7) enhancing site security. Operation and maintenance activities include a deed notice, site inspections, and ground water monitoring. A deed notice for the property was filed with the Vermilion Parish on June 16, 1998. Site inspections have been conducted annually since June 1999. Quarterly ground water monitoring was initiated in 1999 and has continued through 2003.

The five-year review focused on data obtained during ground water monitoring activities performed from 1999 through 2003. In general, the selected remedy appears to be performing as intended and is currently protective of human health and the environment. However, the issues discussed below, which do not affect the protectiveness of the remedy, were noted.

1. **Broken protective well cover** – The protective cover on well G-20 is broken.
2. **Cracked concrete well pad** – The concrete pad associated with well D-3 is cracked.
3. **Several potholes on primary site road** – Several potholes were observed on the primary site road that is used by area residents. Residents complained about road conditions during interviews.
4. **Ground water concentrations are above screening values or maximum contaminant levels (MCLs) and show no observable trend or a decreasing trend**– According to laboratory analytical results, barium, chromium, iron, lead, manganese, and nickel have been detected in the ground water at concentrations exceeding screening criteria or the MCL during one or more sampling events. However, no observable trend or a decreasing trend has been shown for these contaminants. In addition, no increasing trend has been shown at any well that exceeded the screening value or MCL.
5. **Ground water concentrations with increasing trends and values below the MCL**- According to laboratory analytical results, concentrations of barium have been below the MCL for well D-1 and chromium has been below the MCL for wells D-3 and D-5. All three of these wells show an increasing trend. Arsenic has been detected at concentrations that are below the MCL, however a statistical analysis could not be performed due to the change in detection limit.
6. **No down gradient wells**- No down gradient wells were sampled to evaluate whether contaminants are migrating.

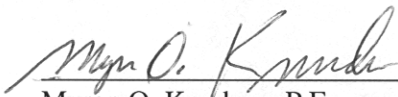
#### **Actions Needed**

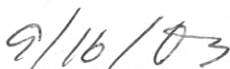
1. The broken protective well cover on well G-20 should be repaired.
2. The concrete well pad associated with well D-3 should be replaced or repaired.

3. The purpose and existence of the access road was to provide the responsible parties with direct access to the site for the purposes of remedial action and continued operation and maintenance (O&M). This road is located within the site property boundaries and is considered by the responsible parties to be private property. Interested parties should work with the responsible parties and local government entities to determine what would be required to maintain the road for public use.
4. Ground water monitoring should continue on an annual basis for barium, chromium, and manganese. Iron, lead, nickel, and vanadium can be removed from the sampling list due to overall consistent concentration results below the EPA Region 6 human health medium-specific screening levels and/or the presence of decreasing trends.
5. Ground water monitoring should continue on an annual basis for barium and chromium due to the increasing trends shown for wells D-1, D-3, and D-5. Arsenic monitoring should continue because a statistical analysis could not be completed.
6. Based on analytical data from site wells, the presence of an identifiable or sustainable plume has not been established; therefore, off-site migration is not a concern at this time. Although down gradient wells specific to the site are not included in the monitoring program, the Gulf Coast Vacuum Service (GCVS) site is located adjacent to D.L. Mud, and the wells associated with GCVS are monitored on a routine basis for the same trace elements (arsenic, barium and chromium). Possible contaminant migration related to both sites is evaluated annually. Manganese is not analyzed from wells on the GCVS; however, the presence of manganese as a solute in ground water is expected to be the result of natural reducing conditions. In the future, the ground water monitoring network could be expanded should the existence of an identifiable and sustainable plume be established. At this time, there is no indication that contaminants are migrating.

### Determinations


I have determined that the selected remedy for the D.L. Mud site is protective of human health and the environment and will remain so provided that (1) the ground water monitoring data are evaluated on a routine basis to determine if degradation of ground water is occurring and (2) the deed notice is enforced.


  
\_\_\_\_\_  
Myron O. Knudson, P.E.  
Director  
Superfund Division  
U.S. Environmental Protection Agency Region 6


  
\_\_\_\_\_  
Date

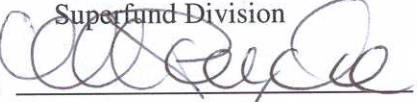
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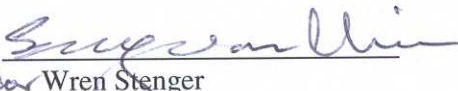
FIVE-YEAR REVIEW FOR  
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EPA ID No. LAD981058019

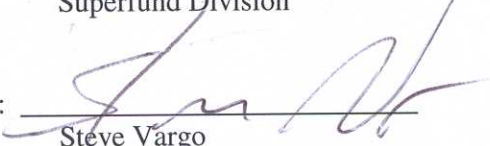
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## ACRONYMS AND ABBREVIATIONS

§	Section
ARAR	Applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
D.L. Mud	D.L. Mud, Inc.
Dow	The Dow Chemical Company
DSI	Dowell Schlumberger, Inc.
EPA	U.S. Environmental Protection Agency
GCVS	Gulf Coast Vacuum Services
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
MCL	Maximum contaminant level
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and maintenance
PRP	Potentially responsible party
RA	Remedial action
Radian	Radian International LLC
RAO	Remedial action objectives
RCRA	Resource Conservation and Recovery Act
RD	Remedial design
RD/RA	Remedial design/remedial action
RI/FS	Remedial investigation and feasibility study
ROD	Record of Decision
Tetra Tech	Tetra Tech EM Inc.



## EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency Region 6 (EPA) conducted a five-year review of the remedial action (RA) implemented at the D.L. Mud, Inc., (D.L. Mud) Superfund site in Abbeville, Vermilion Parish, Louisiana. The purpose of this five-year review was to determine whether the selected remedy for the site continues to protect human health and the environment. This review was conducted from January through July 2003, and its findings and conclusions are documented in this report. The first five-year period extended from 1998 through 2003. Several documents were reviewed including those that contain the following data: (1) ground water analytical data from 1999 through 2003; (2) statistical analysis results from data collected from 1999 through 2003; and, (3) confirmation sampling results.

The D.L. Mud site was listed on the National Priorities List (NPL) in 1989. The EPA signed the Record of Decision (ROD) for the D.L. Mud site on September 22, 1994. Remedial action objectives (RAO) were developed to aid in the development and screening of RA alternatives for the site. The RAO for the D.L. Mud site is as follows:

To eliminate or reduce identified and/or potential risks by preventing the ingestion of barium-contaminated soils and by reducing the potential for migration of contaminants from both surface and subsurface soils to the ground water.

The remedy selected in the ROD included the following three components:

- Establishing and enforcing land use and deed notices/restrictions on the property to eliminate the potential for ingestion of barium-contaminated surface soils by hypothetical future residents;
- Excavating and disposing of visually contaminated subsurface soil at an off-site disposal facility to eliminate the potential for migration of the contaminants into the ground water; and,
- Monitoring ground water to make certain that waste excavation actions are successful and that potential ground water degradation from residual surface soil contaminants does not occur.

The RA began in 1998 after approval of the remedial design/remedial action (RD/RA) work plan. The final inspection conducted on February 17, 1999, concluded that the selected remedy had been constructed and completed in accordance with the RD plans and specifications. The final closeout report for the D.L. Mud site was submitted in June 1999.

Consistent with the remedy selected in the ROD, RA activities included: (1) re-establishing locations of former impoundments that were identified during the remedial investigation (RI); (2) excavating visually contaminated subsurface soil; (3) backfilling with off-site soils and unstained stockpiled soils that were confirmed clean through sampling; (4) demolishing a shed located on the northern portion of the site; (5) transporting and disposing of stained soil, drums, and rubbish encountered during excavation of stained soil and debris from demolition and site cleanup activities; (6) grading the site; and, (7) enhancing site security. The operation and maintenance (O&M) activities include a deed notice, site inspections, and ground water monitoring. A deed notice for the property was filed with the parish on June 16, 1998. Site inspections have been conducted annually since June 1999. Quarterly ground water monitoring was initiated in 1999 and has continued through 2003.

Based on the findings of the first five-year review, the following issues were observed and should be addressed:

#### **Issues**

1. **Broken protective well cover** – The protective cover on well G-20 is broken.
2. **Cracked concrete well pad** – The concrete pad associated with well D-3 is cracked.
3. **Several potholes on primary site road** – Several potholes were observed on the primary site road that is used by area residents. Residents complained about road conditions during interviews.
4. **Ground water concentrations are above screening values or maximum contaminant levels (MCLs) and show no observable trend or a decreasing trend**– According to laboratory analytical results, barium, chromium, iron, lead, manganese, and nickel have been detected in the ground water at concentrations exceeding screening criteria or the MCL during one or more sampling events. However, no observable trend or a decreasing trend has been shown for these contaminants. In addition, no increasing trend has been shown at any well that exceeded the screening value or MCL.
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6. **No down gradient wells**- No down gradient wells were sampled to evaluate whether contaminants are migrating.

## **Actions Needed**

1. The broken protective well cover on well G-20 should be repaired.
2. The concrete well pad associated with well D-3 should be replaced or repaired.
3. The purpose and existence of the access road was to provide the responsible parties with direct access to the site for the purposes of remedial action and continued O&M. This road is located within the site property boundaries and is considered by the responsible parties to be private property. Interested parties should work with the potentially responsible parties and local government entities to determine what would be required to maintain the road for public use.
4. Ground water monitoring should continue on an annual basis for barium, chromium, and manganese. Iron, lead, nickel, and vanadium can be removed from the sampling list due to overall consistent concentration results below the EPA Region 6 human health medium-specific screening levels and/or the presence of decreasing trends.
5. Ground water monitoring should continue on an annual basis for barium and chromium due to the increasing trends shown for wells D-1, D-3, and D-5. Arsenic monitoring should continue because a statistical analysis could not be completed.
6. Based on analytical data from site wells, the presence of an identifiable or sustainable plume has not been established; therefore, off-site migration is not a concern at this time. Although down gradient wells specific to the site are not included in the monitoring program, the Gulf Coast Vacuum Service (GCVS) site is located adjacent to D.L. Mud, and the wells associated with GCVS are monitored on a routine basis for the same trace elements (arsenic, barium and chromium). Possible contaminant migration related to both sites is evaluated annually. Manganese is not analyzed from wells on the GCVS; however, the presence of manganese as a solute in ground water is expected to be the result of natural reducing conditions. In the future, the ground water monitoring network could be expanded should the existence of an identifiable and sustainable plume be established. At this time, there is no indication that contaminants are migrating.

Based on the information available during the first five-year review, the selected remedy for the D.L. Mud site is currently protective of human health and the environment. For the remedy to remain protective in the long-term, ground water monitoring data need to be evaluated on a routine basis, and the deed notice needs to be enforced.

### Five-Year Review Summary Form

#### SITE IDENTIFICATION

**Site Name (from WasteLAN):** D.L. Mud, Inc. Site

**EPA ID (from WasteLAN):** LAD981058019

**Region:** 6

**State:** Louisiana

**City/County:** Abbeville/Vermilion Parish

#### SITE STATUS

**NPL Status:**  Final  Deleted  Other (specify) \_\_\_\_\_

**Remediation Status** (choose all that apply):  Under Construction  Operating  
 Complete

**Multiple OUs?\***  YES  NO

**Construction Completion Date:** 1999

**Has site been put into reuse?**  YES  NO

#### REVIEW STATUS

**Reviewing Agency:**  EPA  State  Tribe  Other Federal Agency \_\_\_\_\_

**Author Name:** Katrina Coltrain

**Author Title:** Remedial Project Manager

**Author Affiliation:** EPA Region 6

**Review Period:\*\*** 1998 to 2003

**Date(s) of Site Inspection:** 1/27 and 1/28 2003

**Type of Review:**  Statutory  
 Policy  Post-SARA  Pre-SARA  NPL-Removal only  
 Non-NPL Remedial Action Site  NPL State/Tribe-lead  
 Regional Discretion

**Review Number:**  1 (first)  2 (second)  3 (third)  Other (specify) \_\_\_\_\_

**Triggering Action:**

Actual RA On-site Construction at OU-1  Actual RA Start  
 Construction Completion  Previous Five-Year Review Report  
 Other (specify) \_\_\_\_\_

**Triggering Action Date (from WasteLAN):** 10/01/98

**Due Date (Five Years After Triggering Action Date):** 10/01/03

\* "OU" refers to operable unit.

\*\* The review period refers to the period during which the five-year review was conducted.

## Five-Year Review Summary Form

### Issues:

1. **Broken protective well cover** – The protective cover on well G-20 is broken.
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6. **No down gradient wells**- No down gradient wells were sampled to evaluate whether contaminants are migrating offsite.

### Recommendations and Follow-Up Actions:

1. The broken protective well cover on well G-20 should be repaired.
2. The concrete well pad associated with well D-3 should be replaced or repaired.
3. The purpose and existence of the access road was to provide the responsible parties with direct access to the site for the purposes of remedial action and continued operation and maintenance (O&M). This road is located within the site property boundaries and is considered by the responsible parties to be private property. Interested parties should work with the potentially responsible parties and local government entities to determine what would be required to maintain the road for public use.
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5. Ground water monitoring should continue on an annual basis for barium and chromium due to the increasing trends shown for wells D-1, D-3, and D-5. Arsenic monitoring should continue because a statistical analysis could not be completed.

6. Based on analytical data from site wells, the presence of an identifiable or sustainable plume has not been established; therefore, off-site migration is not a concern at this time. Although down gradient wells specific to the site are not included in the monitoring program, the Gulf Coast Vacuum Service (GCVS) site is located adjacent to D.L. Mud, and the wells associated with GCVS are monitored on a routine basis for the same trace elements (arsenic, barium and chromium). Possible contaminant migration related to both sites is evaluated annually. Manganese is not analyzed from wells on the GCVS; however, the presence of manganese as a solute in ground water is expected to be the result of natural reducing conditions. In the future, the ground water monitoring network could be expanded should the existence of an identifiable and sustainable plume be established. At this time, there is no indication that contaminants are migrating.

**Protectiveness Statement:**

The RA is currently protective of human health and the environment.

**Long-Term Protectiveness:**

Based on the information available during the first five-year review, the selected remedy for the D.L. Mud site is currently protective of human health and the environment. For the remedy to remain protective in the long-term, ground water monitoring data need to be evaluated on a routine basis, and the deed notice needs to be enforced.

## 1.0 INTRODUCTION

The U.S. Environmental Protection Agency Region 6 (EPA), with assistance from Tetra Tech EM Inc. (Tetra Tech) and in coordination with the Louisiana Department of Environmental Quality (LDEQ), conducted the first five-year review of the remedial action (RA) implemented at the D.L. Mud, Inc. (D.L. Mud) Superfund site in Abbeville, Louisiana. The purpose of a five-year review is to determine whether the remedy at a site is protective of human health and the environment.

The EPA must implement five-year reviews in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) if hazardous substances, pollutants, or contaminants remain onsite above levels that allow for unlimited use and unrestricted exposure. CERCLA Section § 121(c), 42 U.S.C. § 9621(c), as amended, states the following:

“If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each 5 years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.”

NCP §300.430(f)(4)(ii), 40 C.F.R. § 300.430(f)(4)(ii), states the following:

“If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.”

Because hazardous substances, pollutants, or contaminants remain at the D.L. Mud site above levels that allow for unlimited use and unrestricted exposure, a five-year review is required.

The period addressed by the first five-year review for D.L. Mud extended from 1998 through 2003. The triggering action for this review was the start of the RA in October 1998. The five-year review was conducted from January through July 2003, and its methods, findings, conclusions, and recommendations are documented in this report.

This report documents the five-year review for the D.L. Mud site by providing the following information:

- Site chronology (Section 2.0);
- Background information (Section 3.0);
- EPA RA (Section 4.0);
- Five-year review process (Section 5.0);
- Findings of review (Section 6.0);
- Technical assessment of the site (Section 7.0);
- Issues identified (Section 8.0);
- Recommendations to address issues and follow-up activities (Section 9.0);
- Protectiveness statement (Section 10.0); and,
- Discussion of the next review (Section 11.0).

Appendix A lists documents reviewed, and Appendix B presents a site visit report

## **2.0 SITE CHRONOLOGY**

Table 1 presents a chronology of events for the D.L. Mud site. Additional historical information for the site is available on line at: <http://www.epa.gov/earth1r6/6sf/pdffiles/d-l-mud.pdf> (EPA 2003b).

## **3.0 BACKGROUND**

This section discusses the site's physical characteristics, land and resource use near the site, the history of site contamination, the initial response to the site, and the basis for the response.

### **3.1 PHYSICAL CHARACTERISTICS**

The D.L. Mud site is located approximately three miles southwest of Abbeville, Vermilion Parish, Louisiana, immediately south of the Gulf Coast Vacuum Services (GCVS) Superfund site. The site covers approximately 12.8 acres and is bounded to the north by the GCVS site and to the east, south, and west by agricultural land with livestock grazing, crawfish farming, and crop production (see Figure 1) (EPA 1994). Approximately 2,600 people live within three miles of the site (EPA 2003b).



The site is generally flat and is located in the low-lying flatland of the Atlantic Gulf Coastal Plain. The surface elevation at the site is approximately 15 feet above mean sea level (Radian International LLC [Radian] 1999). The topographic relief is less than five feet. Levees associated with a former irrigation canal network bound the eastern and southern portions of the site, and an abandoned irrigation canal transects the property from east to west (EPA 1994). Irrigation water is now supplied by ground water, and these former canals are used as drainage ditches or are diked to collect rainwater after heavy rain events. Surface water runoff from the northern portion of the site flows to the unnamed ditch that transects the site and continues to flow to the northeast, where the ditch merges with Coulee Galleque. The Coulee Galleque flows easterly until it forms a confluence with Coulee Kenny, which flows southeasterly to the Vermillion River north of the town of Perry. The southern portion of the site is poorly drained, with slopes less than ½ percent toward the southern former canal network. Surface water runoff from the southern portion of the site flows southerly to unnamed ditches that flow through the Noel Canal to the Vermillion River south of the town of Perry.

Area topsoil consists of silt loam. Soil to a depth of approximately 25 feet below ground surface consists primarily of clay and silty clay. The permeability of site soils has been measured to be less than  $1 \times 10^{-7}$  centimeters per second. A water-bearing unit, consisting of a silty sandy layer over a sandy layer, lies below the clay layer. This water-bearing unit is part of the Chicot Aquifer System. The Chicot Aquifer System is the principal source of ground water supply within the Abbeville area. (Radian 1999). Shallow ground water (between 30 and 70 feet below ground surface) is turbid from clays and silts and inappropriate for drinking or irrigation. Deeper ground water (between 80 and 120 feet below ground surface) is used for drinking water and is virtually free of visible solids. Ground water flow beneath the site is generally to the north. Mounding along the property line between the D.L. Mud and GCVS sites has been observed and could result in movement of ground water between the two sites.

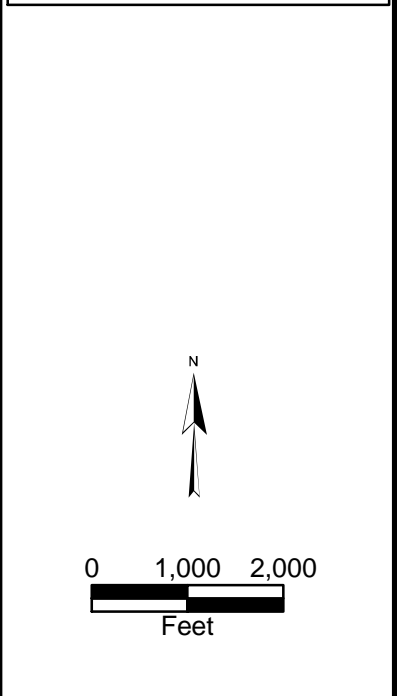
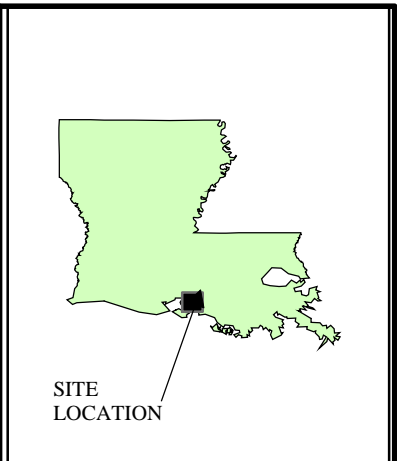
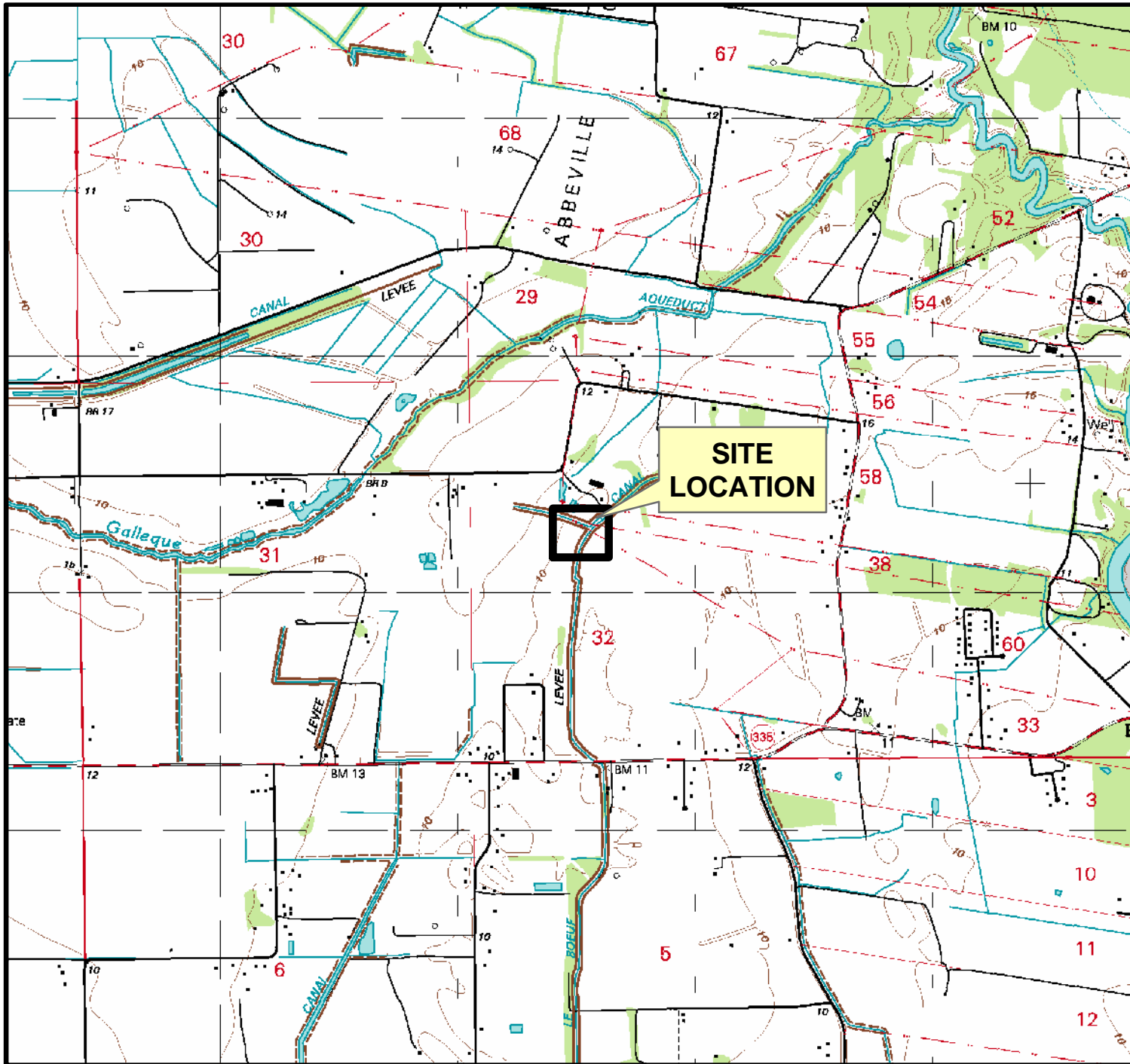
**TABLE 1**  
**CHRONOLOGY OF SITE EVENTS**

Date	Event
June 27, 1980 (EPA 1994)	Site discovery <sup>a</sup>
July 1980	Preliminary assessment <sup>a</sup>
September 1980	Preliminary sampling inspection <sup>a</sup>
1983	Removal of debris and contaminated soil in response to findings from LDNR inspection
July 1985	Additional inspection and sampling
September 1985	Hazardous Ranking System scoring
August 1986	Identification and preliminary assessment
1987	Expanded site inspection
June 1988	Proposal to NPL
October 1989	Final NPL listing
April 1987	Removal action
July 1987	Tank contents removed, tanks dismantled, and soil excavated
1988	Potentially responsible party search
June 1990	Administrative order on consent issued
December 1992	Remedial investigation
November 1993	Feasibility study
April 1994	Proposed plan
September 1994	Record of decision issued
March 1998	Consent decree issued
October 1998	Approval of RD/RA work plan and initiation of RA
November 1998	Pre-final inspection completed
February 1999	Final inspection completed
June 1999	Submittal of RA report and initiation of O&M
June 1999	Closeout report completed
March 2000	Deletion from NPL
August 2000	Annual Report of Site conditions 1999/ Year 1
April 2001	Annual Report of Site conditions 2000/ Year 2
June 2002	Annual Report of Site conditions 2001/ Year 3
August 2003	Annual Report of Site conditions 2002/ Year 4
August 2003	Statistical Analysis Report 2003/ Year 4

Notes:

- <sup>a</sup> Event occurred at property that included D.L. Mud, Inc., and Gulf Coast Vacuum Services
- EPA U.S. Environmental Protection Agency
- LDNR Louisiana Department of Natural Resources
- NPL National Priorities List
- O&M Operations and maintenance
- RA Remedial action
- RD Remedial design

Sources: EPA 1994, 2003b



D.L. MUD INC. SITE  
 ABBEVILLE, LOUISIANA

**FIGURE 1**  
 SITE LOCATION  
 FIVE-YEAR REVIEW

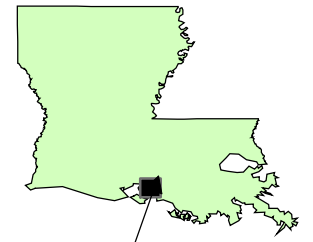
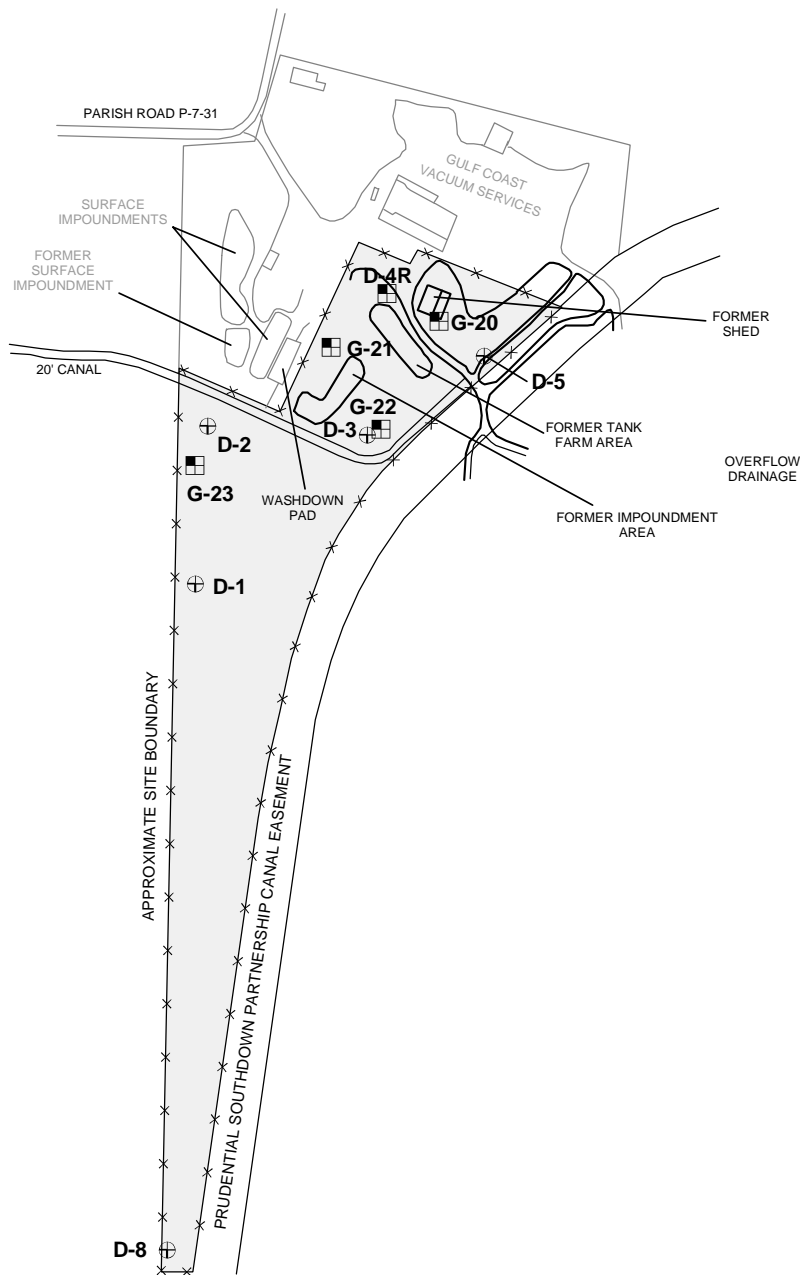
PREPARED FOR:  BY: 

### **3.2 LAND AND RESOURCE USE**

The primary land uses near the site are agricultural and residential. No significant change in land use near the site has been projected. Agricultural land is predominantly used as pasture land for cattle grazing, crawfish farming, and crop production. Residences are located within 0.5 mile of the site on Parish Road P-7-31 and Louisiana Highway 335, with approximately 116 people within a 1-mile radius of the site (EPA 1999). Residents who are outside the corporate limits of Abbeville use ground water for drinking water and irrigation (EPA 1999). Surface water at the site consists of unnamed drainage ditches that ultimately drain into the Vermilion River. The Vermilion River is about 1 mile east of the D.L. Mud site and is used for recreational purposes, including swimming, fishing, and water skiing. The River also partially supports fish and wildlife use. The Vermilion River is used to supply the canal water for irrigation and recharges the aquifers used for irrigation (EPA 1994).




### **3.3 HISTORY OF CONTAMINATION**

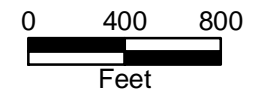
The D.L. Mud site was originally part of a 25.56-acre parcel of land that was used as a drilling mud facility until 1980. In 1981, The Dowell Division of The Dow Chemical Company (Dow) purchased a 12.78-acre portion of the parcel that contained the barium sulfate-based drilling mud blending operation. The remaining portion of the 25.56-acre parcel is now known as the GCVS site, which contained impoundments used to dispose of oilfield exploration and production wastes. Ownership of the D.L. Mud Site transferred to Dowell Schlumberger, Inc. (DSI) in 1984, and the site was sold to D.L. Mud in 1985. D.L. Mud went out of business in 1986. While the facility was still operating, numerous large tanks and surface impoundments were used to mix and store raw materials and waste (EPA 1994). The former tank area and surface impoundment area are shown on Figure 2. The types of wastes that were generated, stored, or disposed of at this site are generally defined as “non-hazardous oilfield wastes,” which can contain hazardous substances.



SITE LOCATION

**LEGEND**

-  Upper Zone Wells
-  Lower Zone Wells
-  D.L. Mud Perimeter Boundary



D.L. MUD INC. SITE  
 ABBEVILLE, LOUISIANA

**FIGURE 2**  
**SITE LAYOUT**  
 FIVE-YEAR REVIEW

PREPARED FOR:  BY: 

Source: Modified from URS Corporation, 2003

### **3.4 INITIAL RESPONSE**

Two removal actions were conducted at the D.L Mud site before the ROD, one in 1983 and one in 1987. In 1983, the Louisiana Department of Natural Resources (LDNR) inspected the site and notified Dow that the D.L. Mud site was out of compliance with Louisiana Waste Management Program requirements. In response, Dow removed and manifested drums with waste; cleaned up, drummed, and disposed of spill material; re-graded the site; and constructed a levee system around the tank farm. The LDNR inspected the site after the removal action and confirmed the above-listed activities were completed (EPA 1994).

From April 14, 1987 through July 11, 1987, Dow/DSI, under LDEQ oversight, conducted a removal action at the D.L. Mud site in response to previous sampling events that identified the presence of hazardous substances in the tanks and associated soil. The removal action included the following tasks (EPA 1994, 2003b; DSI 1987).

- Removing and disposing of 1.3 million pounds of tank contents and associated soils and 14,800 gallons of tank liquid.
- Decontaminating and demolishing tanks, supports, and piping.
- Removing and disposing of approximately 800 cubic yards of contaminated soils from eight on-site areas.
- Placing clean off-site fill material on site in the excavated areas.

An LDEQ representative used a photoionization meter to determine excavation limits. Verification soil samples were also collected from the bottom of the excavation. Sampling and analysis results from the removal action are presented in the “Report of Decommissioning and Restoration” (DSI 1987), which was approved by LDEQ on February 29, 1988 (EPA 1994).

### **3.5 BASIS FOR RESPONSE**

The remedial investigation (RI) at the D.L. Mud site began in December 1992. Based on the data collected during the RI, it was determined that actual or threatened releases of hazardous substances from the D.L. Mud site, if not addressed by implementing the remedy selected in the Record of Decision (ROD), could present an imminent and substantial endangerment to public health, welfare, or the

environment. Contaminated surface soil and subsurface sludge associated with former surface impoundments were investigated during the RI and addressed in the ROD. Barium was the only site contaminant detected during the RI at a level that poses an unacceptable risk to human health. The threat from barium was identified as the calculated non-carcinogenic risk to future residents from total barium in the surface soils. Tentatively identified compounds in visually contaminated subsurface soil associated with the former impoundment area were also identified as potential risks (EPA 1994).

## **4.0 REMEDIAL ACTION**

This section discusses the selected remedy, remedy implementation, operations and maintenance (O&M), O&M costs, and progress made at the site during the period leading up to this five-year review.

### **4.1 SELECTED REMEDY**

The EPA signed the ROD for the D.L. Mud site on September 22, 1994. Remedial action objectives (RAO) were developed to aid in developing and screening RA alternatives for the site. The RAO for the D.L. Mud site is as follows:

To eliminate or reduce identified and/or potential risks by preventing the ingestion of barium-contaminated soils and by reducing the potential for migration of contaminants from both surface and subsurface soils to the ground water.

The cleanup goals for visually contaminated subsurface soil were based on pit closure requirements contained in Louisiana Statewide Order 29-B, Section 129.B.7, as shown in Table 2 (EPA 1994). No risks related to barium were identified to exist for off-site residents, hypothetical workers, or trespassers; therefore, the implementation of a deed notice eliminated the potential for residential exposure to the low level risks with the residual barium in the surface soils.

**TABLE 2**  
**CLEANUP GOALS FOR VISUALLY CONTAMINATED SUBSURFACE SOIL**

Parameter	Cleanup Goal
PH	6 to 9 Standard Units
Arsenic	10 mg/kg
Barium	40,000 mg/kg
Cadmium	10 mg/kg
Chromium	500 mg/kg
Lead	500 mg/kg
Mercury	10 mg/kg
Selenium	10 mg/kg
Silver	200 mg/kg
Zinc	500 mg/kg
Oil and Grease	Less than 1 percent dry weight

Notes:

mg/kg Milligram per kilogram

The remedy selected in the ROD included the following three components (EPA 1994):

- Establishing and enforcing land use and deed notices/restrictions on the property to eliminate the potential for ingestion of barium-contaminated surface soils by hypothetical future residents;
- Excavating and disposing of visually contaminated subsurface soil at an off-site disposal facility to eliminate the potential for migration of the contaminants into the ground water; and,
- Monitoring ground water to make certain that waste excavation actions are successful and that potential ground water degradation from residual surface soil contaminants does not occur.

#### **4.2 REMEDY IMPLEMENTATION**

A consent decree between EPA and DOW/DSI, was entered in Federal district court on April 15, 1998. The RD/RA work plan was approved by EPA in October 1998 (EPA 2003b) and included details of RA activities specified in the ROD (Radian 1998).



Consistent with the remedy selected in the ROD, RA activities included: (1) re-establishing locations of former impoundments that were identified during the RI; (2) excavating visually contaminated subsurface soil; (3) backfilling with off-site soils and unstained stockpiled soils that were confirmed clean through sampling; (4) demolishing a shed located on the northern portion of the site; (5) transporting and disposing of stained soil, drums, and rubbish encountered during excavation of stained soil and debris from demolition and site cleanup activities; (6) grading the site; and, (7) enhancing site security.

Excavation started in the area of the former impoundments and expanded outwardly until visually clean soil was encountered. Visually contaminated soil and soil with noticeable odors were stockpiled on-site and covered with plastic sheeting before transportation and off-site disposal. During excavation, one area within the former impoundment area was identified to contain buried materials that were uncharacteristic of the materials identified during the RI such as wood, drums, and general debris. These materials and associated soils were excavated, placed into covered roll-off boxes, characterized, and transported off-site for disposal. All trucks were placarded according to U.S. Department of Transportation regulations. All wastes were shipped using appropriate non-hazardous solid waste manifests (Radian 1999).

Excavation was completed after confirmatory samples were collected from the bottom of the excavations and compared with the cleanup goals listed in Table 2. Approximately 3,830 tons of non-hazardous stained soil and 532 tons of non-hazardous rubbish and debris were transported and disposed of off-site.

A final inspection was conducted on February 17, 1999, and concluded that the selected remedy had been constructed and completed in accordance with the RD plans and specifications (Radian 1999). The final closeout report for the D.L. Mud site was submitted in June 1999 (EPA 1999).

#### **4.3 OPERATION AND MAINTENANCE**

The long-term O&M phase of the remedy began on February 22, 1999, after DOW/DSI received a letter dated February 18, 1999, from EPA that documented approval of RA construction activities (Radian 1999). The long-term O&M includes a deed notice, site inspections and maintenance, and quarterly ground water monitoring. A deed notice was filed with the parish on June 16, 1998. Results from site inspections and ground water monitoring events are presented in Annual Site Conditions Reports, which have been prepared for years 1 through 4 (1999 through 2002). The first quarterly ground water

monitoring event and site inspection for year 5 were conducted in January 2003 (URS Corporation [URS] 2003). Results from site inspections and a general description of the ground water monitoring program are discussed in the following paragraphs. Analytical results from ground water monitoring are discussed in Section 6.4.

Annual site inspections are conducted to evaluate the integrity of site fencing and to make certain that the deed notice is being enforced. Based on review of the “Annual Report of Site Conditions, 2001/Year 3,” site fencing and perimeter signs are in good conditions. Representatives of DOW/DSI keep the site locked at all times when it is unoccupied. No evidence of vandalism or trespassing on site has been reported. The site is restricted from agricultural and residential use as specified in the June 16, 1998 deed notice. In addition to maintaining security of the site, DOW/DSI periodically cuts the grass at the site to prevent unwanted trees and bushes from becoming established and to maintain adequate site access (URS 2002).

The monitoring well network includes 10 on-site wells that existed at the time of the ROD: D-1, D-2, D-3, D-4, D-5, D-8, G-20, G-21, G-22, and G-23. Well D-4 was replaced by well D-4R in 2001. Network monitoring well locations are shown on Figure 2. Monitoring wells D-4R, G-20, G-21, G-22, and G-23 are screened in the Alluvium Unit (above 23 feet below mean sea level), and wells D-1, D-2, D-3, D-5, and D-8 are screened in the Upper Chicot Aquifer (deeper than 23 feet below mean sea level) (URS 2002). Well D-8 is located at the southern end of the site and has been designated as the site background well. Samples are currently collected on a quarterly basis. The original list of analytes in the O&M plan included target compound list volatile organic compounds, target compound list semivolatile organic compounds, and target analyte list metals. This list was reduced to arsenic, barium, chromium (total), iron, lead, manganese, nickel, and vanadium based on quarterly monitoring results from 1999 through 2001.

#### **4.4 OPERATION AND MAINTENANCE COSTS**

No O&M cost information is available for the D.L. Mud site.

## **5.0 FIVE-YEAR REVIEW PROCESS**

Katrina Coltrain, the EPA Remedial Project Manager, directed the five-year review for the D.L. Mud site. The EPA notified the potentially responsible party (PRP) group representative, Carey Brannan of Dowell (a division of DSI), at the start of the five-year review process. Additionally, residents of Abbeville were notified of the review through a public notice placed in the *Abbeville Meridional* on December 16, 2002. The five-year review included surveys; reviews of relevant documents, standards, and ground water monitoring data; interviews; and a site inspection conducted on January 27 and 28, 2003. The documents reviewed include, but are not limited to the: (1) 1987 report of decommissioning and restoration; (2) 1994 ROD; (3) 1998 consent decree; (4) 1998 RD/RA work plan; (5) 1999 RA report; (6) 1999 final closeout report; (7) 2001 annual report of site conditions; and, (8) 2003 statistical analysis report. References for all documents reviewed are provided in Appendix A. Upon its completion, the five-year review report will be made available at the information repository for the site, and a notice of its availability will be placed in the local newspaper.

## **6.0 FIVE-YEAR REVIEW FINDINGS**

This section presents the findings of the five-year review. Specifically, this section presents the findings of surveys, a site inspection, an applicable or relevant and appropriate requirements (ARAR) review, and a data review.

### **6.1 SURVEYS**

In accordance with the community involvement requirements of the five-year review process, EPA identified key individuals to be surveyed. Completed survey forms for the following people are included in Appendix B, Exhibit C:

- Michael J, Bertrand, Vermilion Parish Police Jury;
- Carey Brannan, PRP group representative;
- Rich Johnson, LDEQ;
- Wilma Subra, Technical Assistance Group;

- Adjacent Resident, No. 1; and,
- Adjacent Resident, No. 2.

No continuing or unresolved issues were discovered during the interview process. Minor issues and concerns identified during the interview are as follows:

- Information on ground water monitoring frequency and analytical results should be provided to the Vermilion Parish Police Jury. Notification of site visits should also be provided to the police jury;
- Residual contamination at the site is a concern raised by one interviewee; and,
- Potholes along the road are a concern to area residents.

## **6.2 SITE INSPECTION**

A site inspection was conducted on January 27 and 28, 2003, to assess the current condition of the site and the effectiveness of measures employed to protect human health and the environment from the contaminants still present at the site. Attendees included: (1) Katrina Coltrain of EPA; (2) Roger Lee of U.S. Geological Survey; (3) Trey Fortenberry of URS; and, (4) Sarah Babcock, Luis Vega, Ronny Matte, and Byron Trahan of Tetra Tech. The site visit report, which includes a photographic log of the inspection (Exhibit A), a site inspection checklist (Exhibit B), and site survey forms (Exhibit C), is provided in Appendix B.

No evidence of contamination was visible at the site. Most monitoring wells visually inspected were in good condition, clearly labeled, and protected from impact. The well cover on well G-20 was broken, and the concrete slab associated with well D-3 was cracked. Access restrictions including fencing and signs were in good condition, and no vandalism was observed. Several potholes were observed on the primary site road that is used by area residents. There are areas in the former excavation locations that are settling and have ponding water. This settling may need repair if these areas continue to deteriorate.

### **6.3 ARAR REVIEW**

The ROD identified the ARARs and supporting regulations pertaining to the D.L. Mud site. One of the requirements of a five-year review is to determine if there are any new ARARs or standards that may affect the protectiveness of the remedy for the site. Based on the ARARs review, no newly promulgated ARARs or standards pertain to the D.L. Mud site. ARARs applicable to remedial activities at the D.L. Mud site are divided into chemical- and action-specific categories. The ROD did not specify any location-specific ARARs, and no new location-specific ARARs were identified during the five-year review process.

#### **6.3.1 Chemical-Specific ARARs**

Chemical-specific ARARs are usually health- or risk-based numerical values or methodologies used to determine acceptable concentrations of chemicals that may be found in or discharged to the environment. If more than one chemical-specific requirement exists for a contaminant of concern, the most stringent requirement is identified as an ARAR for the RA.

Louisiana Statewide Order No. 29-B (LAC Title 43:Part XIX), which governs the storage, treatment and disposal of non-hazardous oil field wastes generated from the drilling and production of oil and gas wells, is the only chemical-specific ARAR identified in the 1994 ROD. The pit closure concentration requirements and off-site treatment and use requirements of these regulations were relevant and appropriate for the subsurface soils associated with the former surface impoundments. After soil removal, confirmation sample results were taken to ensure that Order NO. 29-B pit closure concentration requirements were met. All samples met stated requirements.

No other chemical-specific ARARs for the D.L. Mud site are identified in the 1994 ROD. No additional chemical-specific ARARs were identified during the five-year review process, and no new chemical-specific requirements pertaining to the site have been promulgated since 1994.

The soil cleanup goal for barium, which is the primary hazardous substance of concern at the site, is a human health risk-based criterion. The soil cleanup goal for barium is based on toxicity values such as

reference doses and potency factors. In the case of a five-year review, only contaminants for which significant changes in toxicity factors reflecting increased toxicity are pertinent, and then only if the selected remedy is no longer protective. Per EPA's Integrated Risk Information System, the toxicity factors for barium were re-evaluated and updated in 1998 and 1999 (EPA 2003a). According to the EPA Superfund Technical Support Center, no changes were made to the numerical values of the toxicity factors for barium (EPA 2003d).

### **6.3.2 Action-Specific ARARs**

Action-specific ARARs are usually technology- or activity-based requirements or limitations on actions or conditions taken with respect to specific substances. Such requirements are triggered by the particular remedial activities selected to implement a remedy.

The Louisiana Drainage Air Pollution Control Standards are the only action-specific ARAR identified in the 1994 ROD. The regulations establish air quality standards and emissions limitations for any source of air emissions within the state. The regulations were appropriate for RA excavation activities that resulted in dust or other discharges to air. Air monitoring conducted during the RA indicated that air emissions were within acceptable limits; therefore, the RA complied with this ARAR. This ARAR no longer applies because there are currently no air emissions from the site.

Resource Conservation and Recovery Act (RCRA) requirements were also evaluated but were considered not to apply to the D.L. Mud site because: (1) portions of the residually contaminated soils at the site were generated and managed before the effective date of RCRA; (2) EPA had not identified any RCRA listed hazardous wastes at the site; and, (3) contaminant concentrations did not exceed the toxicity characteristic leaching procedures criteria for the substances.

No other action-specific ARARs for the D.L. Mud site are identified in the 1994 ROD. No additional action-specific ARARs were identified during the five-year review process, and no new action-specific requirements pertaining to the site have been promulgated since 1994.

## 6.4 DATA REVIEW

Review of the 1999 RA Report (Radian 1999) and the 2000 final closeout report (EPA 1999) for the D.L. Mud site indicates that the remedy is complete and soil cleanup goals have been achieved. Ground water continues to be monitored at the site to determine if degradation is occurring. If ground water monitoring results indicate that source control actions were ineffective in preventing ground water quality degradation, additional remedial actions will be evaluated.

The statistical analysis report was prepared to evaluate whether ground water degradation is occurring and was performed only on the specific trace elements that have been analyzed since 2001 (arsenic, barium, chromium [total], iron, lead, manganese, nickel, and vanadium) (URS 2003). Data from July 1999 through January 2003 were evaluated as part of the statistical analysis. Data were compared with Maximum Contaminant Levels (MCLs) or EPA Region 6 human health medium-specific screening levels. Applicable screening criteria are presented in Table 3. Wells having trace elements that exceed Region 6 human health medium-specific screening levels or MCLs are presented below.

Well D-4/4R exceeded the Region 6 human health medium-specific screening criteria or MCL for barium, chromium, iron, lead, manganese, and nickel. Barium exceeded the MCL, and iron and lead exceeded the screening value for two quarters in 2002. No trend was observed for barium and iron and no trend could be completed for lead due to insufficient data. Chromium exceeded the MCL for all samples in 1999 and 2000, and three quarters in 2001: a decreasing trend was observed. Manganese concentrations exceeded its EPA Region 6 human health medium-specific screening level during one event in 1999, two events in 2001, and in two events in 2002. No observable trend was identified. Nickel concentrations at well D-4/4R exceeded the screening level in four separate quarterly sampling events from 1999 to 2001 and no trend was observed.

The barium, iron, lead and manganese exceedances for two quarters in 2002 were attributed to high turbidity measurements in the total trace elements sample collected from well D-4/4R. Results from dissolved samples taken and analyzed for these trace elements were below associated screening levels and MCLs. Monitoring well D-4R was redeveloped during the first quarter of sampling in 2003 to remove excess solids that had collected in the monitoring well casing. Concentrations for these trace elements, as well as chromium and nickel, were below their screening criteria or MCL at well D-4R during the January 2003 event.

Chromium concentrations at well D-8, which is the background well, exceeded the MCL in 1999, 2000, and 2002 and showed no trend according to the statistical analysis report (URS 2003).

Well G-20 had three concentrations for iron that exceeded the EPA Region 6 human health medium-specific screening level and showed a decreasing trend.

Well G-21 had concentrations for iron and manganese that exceeded the EPA Region 6 human health medium-specific screening level. Manganese exceeded the screening level in all events in 1999 to 2003 and showed no trend, while iron exceeded the screening level in only one quarter in 1999 and shows a decreasing trend.

Lead and arsenic concentrations at well G-22 exceeded the MCL only once each and have not exceeded the MCL since 1999 for lead and 2000 for arsenic. Iron exceeded the screening level for all samples from 1999 and 2000 and shows a decreasing trend. Manganese concentrations at well G-22 exceeded the EPA Region 6 human health medium-specific screening level in all but four events in 1999 to 2003, and show a decreasing trend. Chromium concentrations exceeded the MCL for two sampling events, and show a decreasing trend.

Well G-23 had concentrations of iron and manganese that exceed the EPA Region 6 human health medium-specific screening levels. Manganese exceeded the screening level during three sampling events and shows a decreasing trend. Iron exceeded the screening level in all samples from 1999 and 2000, and one sampling event in 2001. The trend analysis indicates a decreasing trend.

In addition to the trends discussed in the preceding paragraphs, increasing trends were observed at wells D-1 (barium), D-3 (chromium), and D5 (chromium) in the statistical analysis report (URS 2003). However, concentrations at these wells are below their MCLs.

The elevated manganese concentrations are interpreted to be the result of naturally occurring manganese that has been reduced and dissolved into ground water by reduced organic compounds associated with contamination at the D.L. Mud site. Ground-water geochemical environments have altered to slightly reducing, which is conducive to reduction and mobilization of manganese from the solid phase in the aquifer into the aqueous phase of the ground water. Further, total and dissolved manganese data from



ground water in the Upper Zone show little or no difference, indicating manganese increases are in the aqueous phase. With the removal of on-site soil (mostly organic compounds), the influence on ground-water chemistry within the Upper Zone should decrease, returning the aquifer to a more aerobic environment that would be less favorable to manganese reduction and mobilization. This should result in the return of manganese concentrations in the Upper Zone to background concentrations.

Based on the statistical analysis report, there are exceedances of MCLs and EPA Region 6 human health medium-specific screening levels. Of the wells that have these exceedances, none show increasing trends for any trace elements; however, they do display either a decreasing trend or no trend. Three wells do show increasing trends for two trace elements; however, these concentrations are below the MCLs. Therefore, the following trace elements should continue to be monitored on an annual basis:

- Arsenic: due to insufficient data based on detection limit changes at the time of the statistical analysis.
- Barium: due to the increasing trend shown in well D-1 and no observable trends shown for wells D-8, D-2, D-3, D-4/4R, D-5, and G-21.
- Chromium: due to the increasing trends shown for wells D-3 and D-5 and no observable trends shown for wells D-8, D-1, D-2, and G-21.
- Manganese: due to the continued exceedances in wells D-4/4R, G-21, and G-22.

The following constituents can be removed from the ground water monitoring list:

- Iron: due to decreasing trends shown in wells G-20, G-21, G-22, and G-23 and the overall consistent concentration results below the EPA Region 6 human health medium-specific screening level.
- Lead: due to overall consistent concentration results below the EPA Region 6 human health medium-specific screening level.
- Nickel: due to overall consistent concentration results below the EPA Region 6 human health medium-specific screening level.
- Vanadium: due to consistent concentration results below the EPA Region 6 human health medium-specific screening levels and the presence of decreasing trends.

The RD/RA work plan (Radian 1998), the most recent ground water monitoring report (URS 2002), and the statistical analysis report (URS 2003) were reviewed to evaluate whether trace element contamination is migrating or expanding. The most recent ground water monitoring report indicates that ground water in the Upper Zone flows in a radial pattern (from the north, east and west) towards the center of the site, and

ground water north of the property boundary flows towards the north-northwest (URS 2002). The ground water flow in the Lower Zone flows from the south to north/northwest on the southern half of the property and from north to south/southeast on the northern half of the property.

There are wells on the D.L. Mud property down gradient of well D-8 that can confirm that elevated concentrations of chromium are not migrating from this well. However, there are no D.L. Mud wells down gradient and off-site. Based on analytical data from site wells, the presence of an identifiable or sustainable plume has not been established; therefore, off-site migration is not a concern at this time. Although down gradient wells specific to the site are not included in the monitoring program, the GCVS site is located adjacent to D.L. Mud, and the wells associated with GCVS are monitored on a routine basis for the same trace elements (arsenic, barium and chromium). Possible contaminant migration related to both sites is evaluated annually. Manganese is not analyzed from wells on the GCVS; however, the presence of manganese as a solute in ground water is expected to be the result of natural reducing conditions. In the future, the ground water monitoring network could be expanded should the existence of an identifiable and sustainable plume be established. At this time, there is no indication that contaminants are migrating.

TABLE 3

**SUMMARY OF DATA TRENDS AND STATISTICAL ANALYSIS FOR GROUND WATER  
ANALYTICAL RESULTS 1999 THROUGH 2003**

Well No. <sup>a</sup>	3Q99	4Q99	1Q00	2Q00	3Q00	4Q00	1Q01	2Q01	3Q01	4Q01	1Q02	2Q02	3Q02	4Q02	1Q03	Statistical Summary
<b>Arsenic (mg/L) (MCL is 0.05 mg/L)</b>																
<b>Detection Limit</b>	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.01	0.01	0.01	NA
D8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	0.028	0.016	0.014	ID
D1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND	ND	ID
D3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D4/D4R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	0.019	0.043	ND	ID
D5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
G20	ND (0.2)	ND	ND (0.2)	ND	ND	ND	ND	ND	ND	ND	ND	0.028	ND	0.017	ND	ID
G21	ND	ND	ND (0.4)	ND	ND	ND	ND	ND	ND	ND	ND	0.029	ND	0.02	ND	ID
G22	ND	ND	<b>0.08</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
G23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ID
<b>Barium (mg/L) (MCL is 2 mg/L)</b>																
<b>Detection Limit</b>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	NA
D8	0.23	0.256	0.249	0.214	0.232	0.217	0.204	0.22	0.218	0.26	0.23	0.21	0.31	0.22	0.25	NO
D1	0.247	0.267	0.252	0.254	0.264	0.272	0.249	0.246	0.262	0.26	0.3	0.31	0.27	0.26	0.28	Y+
D2	0.277	0.279	0.268	0.247	0.233	0.23	0.262	0.289	0.324	0.32	0.33	0.21	0.28	0.24	0.23	NO
D3	0.251	0.27	0.282	0.308	0.321	0.311	0.298	0.325	0.326	0.28	0.21	0.24	0.18	0.21	0.21	NO
D4/D4R	1.11	1.43	1.84	1.84	1.4	1.68	1.24	1.24	1.65	1.48	1.03	1.14	<b>3.37</b>	<b>2.69</b>	0.24	NO
D5	0.246	0.268	0.239	0.235	0.249	0.243	0.221	0.229	0.221	0.24	0.24	0.23	0.24	0.24	0.57	NO
G20	1.86	1.84	1.79 (.05)	1.4	1.37	1.3	1.13	1.36	1.35	1.75	1.14	1.19	1.12	0.59	0.51	Y-
G21	1.6	1.82	1.6	1.58	1.68	1.94	1.72	1.61	1.88	1.82	1.58	1.78	1.76	1.76	1.76	NO
G22	0.994	1.57	1.53 (.02)	0.592	0.535	1	0.341	0.25	0.792	0.48	0.3	0.58	0.42	0.4	0.38	Y-
G23	1.65	1.29	0.535	0.764	0.384	0.917	0.122	0.357	0.304	0.46	0.17	0.25	0.2	0.21	1.6	Y-

TABLE 3 (Continued)

SUMMARY OF DATA TRENDS AND STATISTICAL ANALYSIS FOR GROUND WATER  
ANALYTICAL RESULTS 1999 THROUGH 2003

Chromium (mg/L) (MCL is 0.1 mg/L)																
Detection Limit	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	NA
D8	0.041	<b>0.101</b>	<b>0.133</b>	<b>0.69</b>	0.052	ND	ND	ND	0.028	0.054	0.094	<b>0.11</b>	0.1	ND	0.03	NO
D1	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.073	0.038	0.017	ND	ND	NO
D2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.038	0.01	0.011	ND	ND	NO
D3	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	0.043	0.074	0.013	0.041	0.036	Y+
D4/D4R	<b>2.14</b>	<b>0.19</b>	<b>0.315</b>	<b>0.352</b>	<b>0.173</b>	<b>0.302</b>	<b>0.21</b>	<b>0.206</b>	<b>0.814</b>	0.013	0.072	0.059	0.089	0.1	0.013	Y-
D5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.019	0.028	0.021	0.021	0.011	Y+
G20	0.058	0.017	ND (.05)	0.011	ND	0.023	ND	ND	ND	0.012	ND	ND	ND	ND	ND	Y-
G21	0.021	0.025	ND	ND	ND	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	NO
G22	0.04	<b>0.14</b>	<b>0.101</b>	0.019	ND	0.033	ND	ND	ND	ND	0.012	ND	ND	ND	ND	Y-
G23	0.02	0.015	0.019	0.012	0.012	0.039	ND	ND	ND	ND	ND	0.015	ND	ND	0.011	Y-
Iron (mg/L) (EPA Region 6 Human Health Medium-specific Screening Level is 11 mg/L)																
Detection Limit	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	NA
D8	4.31	4.89	6.8	3.82	4.33	3.02	2.98	3.52	3.66	4.81	4.78	2.97	7.17	3.54	4.44	NO
D1	0.571	0.516	0.606	0.546	0.529	0.493	0.584	0.537	0.532	0.57	2.13	0.67	0.53	0.71	1.06	NO
D2	4.87	4.58	4.98	5.01	4.26	4.02	5.09	5.31	5.34	5.54	4.55	3.3	4.03	4.0	3.25	NO
D3	0.531	0.846	0.88	1.18	1.24	1.04	1.42	1.43	0.13	0.12	0.92	1.23	0.16	0.38	0.81	NO
D4/D4R	10.9	0.978	7.35	7.67	1.59	3.12	1.44	0.859	5.16	8.1	2.74	3.7	<b>83.4</b>	<b>98.1</b>	1.19	NO
D5	0.079	ND	0.055	ND	ND	ND	ND	ND	ND	ND	0.28	0.055	0.066	ND	ND	NO
G20	<b>36.9</b>	<b>21.8</b>	<b>23.1</b>	5.49	4.44	5.47	ND	0.11	0.701	2.11	1.02	0.72	0.055	3.58	4.76	Y-
G21	6.35	<b>26.3</b>	6.61	9.16	7.89	10.8	0.585	0.247	4.62	2.92	1.43	2.41	2.57	1.47	2.94	Y-
G22	<b>31</b>	<b>108</b>	<b>109</b>	<b>15.4</b>	<b>12.5</b>	<b>31.3</b>	0.134	0.305	5	5.2	3.16	1.26	2.3	1.14	0.65	Y-
G23	<b>12.5</b>	<b>16.1</b>	<b>21.6</b>	<b>12.8</b>	<b>15.1</b>	<b>39.5</b>	ND	8.88	<b>11.7</b>	8.24	2.04	10.5	3.86	2.28	6.64	Y-

TABLE 3 (Continued)

SUMMARY OF DATA TRENDS AND STATISTICAL ANALYSIS FOR GROUND WATER  
ANALYTICAL RESULTS 1999 THROUGH 2003

Lead (mg/L) (MCL is 0.015 mg/L)																
Detection Limit	0.05	0.05	0.015	0.015	0.015	0.015	0.05	0.05	0.05	0.015	0.015	0.015	0.015	0.015	0.015	NA
D8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D4/D4R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>.09</b>	<b>0.095</b>	ID
D5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
G20	ND (.25)	ND	ND (.075)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
G21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
G22	ND	<b>0.079</b>	ND (.03)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
G23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
Manganese (mg/L) (EPA Region 6 Human Health Medium-specific Screening Level is 1.7 mg/L)																
Detection Limit	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.02	0.02	0.02	0.02	NA
D8	0.549	0.616	0.63	0.521	0.605	0.514	0.484	0.528	0.54	0.65	0.57	0.45	0.65	0.56	0.61	NO
D1	1.19	1.22	1.24	1.18	1.3	1.23	1.17	1.17	1.23	1.25	1.17	1.2	1.03	1.24	1.2	NO
D2	0.648	0.654	0.667 (.2)	0.616	0.583	0.563	0.63	0.675	0.738	0.71	0.61	0.52	0.6	0.6	0.56	NO
D3	0.675	0.797	0.893	0.93	1.02	.932	0.892	0.924	0.314	0.18	0.13	0.15	0.032	0.058	0.27	Y-
D4/D4R	<b>1.75</b>	1.35	0.832	1.02	0.802	1.16	1.29	1.1	<b>2.34</b>	<b>2.8</b>	0.61	0.94	<b>5.36</b>	<b>4.85</b>	0.61	NO
D5	0.519	0.581	0.646	0.584	0.655	.598	0.544	0.604	0.542	0.62	0.7	0.65	0.64	0.62	0.13	NO
G20	1.44	0.894	0.899 (.1)	0.165	0.221	.251	0.02	0.095	0.441	0.34	0.25	0.11	0.14	0.24	0.44	NO
G21	<b>5.88</b>	<b>6.7</b>	<b>6.84</b>	<b>6.29</b>	<b>7.36</b>	<b>7.35</b>	<b>6.61</b>	<b>6.49</b>	<b>7.67</b>	<b>7.47</b>	<b>6.51</b>	<b>7.18</b>	<b>6.35</b>	<b>7.19</b>	<b>6.52</b>	NO
G22	<b>12.1</b>	<b>18.4</b>	<b>15.4 (.04)</b>	<b>3.96</b>	<b>2.54</b>	<b>6.39</b>	1.1	0.941	<b>9.62</b>	<b>3.82</b>	1.07	<b>2.82</b>	<b>3.12</b>	<b>2.72</b>	1.52	Y-
G23	<b>2.11</b>	<b>2.89</b>	1.43	1.14	0.89	<b>2.33</b>	0.2	0.937	1.03	0.74	0.31	0.6	0.39	0.4	<b>2.61</b>	Y-
Nickel (mg/L) (EPA Region 6 Human Health Medium-specific Screening Level is 0.73 mg/L)																

**TABLE 3 (Continued)**

**SUMMARY OF DATA TRENDS AND STATISTICAL ANALYSIS FOR GROUND WATER  
ANALYTICAL RESULTS 1999 THROUGH 2003**

<b>Detection Limit</b>	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	NA	
D8	ND	0.063	0.053	0.055	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
D1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
D2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
D3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	ND	ND	ND	ID	
D4/D4R	<b>0.991</b>	0.283	0.217	0.346	0.204	0.485	<b>0.884</b>	<b>0.883</b>	<b>1.18</b>	ND	0.052	0.081	0.14	0.15	0.064		NO	
D5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
G20	ND (.2)	ND	ND (.2)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
G21	ND	0.041	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
G22	0.047	0.125	0.13	ND	ND	0.043	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
G23	ND	ND	0.04	ND	ND	0.058	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
<b>Vanadium (mg/L) (EPA Region 6 Human Health Medium-specific Screening Level is 0.26 mg/L)</b>																		
<b>Detection Limit</b>	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	NA
D8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID
D4/D4R	ND	ND	ND	ND	ND	ND	0.033	0.031	ND	0.027	ND	ND	0.15	0.14	ND		ID	
D5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ID	
G20	ND (.1)	0.035	ND (.1)	ND	ND	ND	0.028	0.026	ND	0.03	ND	ND	ND	ND	ND	ND	ID	
G21	ND	0.043	ND	ND	ND	ND	0.033	0.029	ND	0.023	ND	ND	ND	ND	ND	ND	ID	
G22	0.047	0.146	0.098	0.027	0.026	0.031	0.029	0.025	ND	ND	ND	ND	ND	ND	ND	ND	Y-	
G23	0.021	0.03	ND	ND	0.029	0.048	0.029	0.036	0.026	0.024	ND	ND	ND	ND	ND	ND	Y-	

**TABLE 3 (Continued)**

**SUMMARY OF DATA TRENDS AND STATISTICAL ANALYSIS FOR GROUND WATER  
ANALYTICAL RESULTS 1999 THROUGH 2003**

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Notes:

**Bolded values are above screening criteria**

<sup>a</sup> Wells D-1, D-2, D-3, D-5, D-8 are screened in the Lower Zone (the Upper Chicot Aquifer), and wells D-4R, G-20, G-21, G-22, and G-23 are screened in the Upper Zone (the alluvium unit).

(0.02) Unique detection limit for that sample

EPA U.S. Environmental Protection Agency

ID Insufficient data; trend analysis could not be completed

LDEQ Louisiana Department of Environmental Quality

mg/L Milligram per liter

NA Not applicable

ND Not detected

NO No trend observed

Y+ Increasing trend observed

Y- Decreasing trend observed

Source: URS 2003

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## 7.0 TECHNICAL ASSESSMENT

The conclusions presented in this section support the determination that the selected remedy for the D.L. Mud site is currently protective of human health and the environment. EPA guidance indicates that to assess the protectiveness of a remedy, three questions shall be answered.

### **Question A: Is the remedy functioning as intended by the decision documents?**

- **RA performance** – Based on review of documents, ARARs, and the site inspection, the selected remedy has been completed in accordance with the 1994 ROD. Cleanup goals were achieved as documented by the RA and closeout reports (Radian 1999; EPA 1999). Ground water continues to be monitored to evaluate whether source area removals effectively prevent ground water degradation. Based on review of ground water monitoring reports, including the statistical report, barium, chromium, iron, lead, manganese, and nickel have been detected in the ground water at concentrations exceeding screening criteria or the MCL at one or more sampling events; however, no observable trend or a decreasing trend has been shown. Based on analytical data from site wells, the presence of an identifiable or sustainable plume has not been established; therefore, off-site migration is not a concern at this time. Although down gradient wells specific to the site are not included in the monitoring program, the GCVS site is located adjacent to D.L. Mud, and the wells associated with GCVS are monitored on a routine basis for the same trace elements (arsenic, barium, and chromium). Possible contaminant migration related to both sites is evaluated annually. Manganese is not analyzed from wells on the GCVS; however, the presence of manganese as a solute in ground water is expected to be the result of natural reducing conditions. Lastly, barium concentrations are increasing at well D-1, and chromium concentrations are increasing at wells D-3 and D-5; however, concentrations are below MCLs.
- **System O&M** – Yearly site inspections and routine ground water monitoring, which are the primary O&M activities associated with the implemented RA, will maintain the effectiveness of the selected remedy. No maintenance issues that would affect the protectiveness of the remedy were identified during the five-year review site inspection; however, minor maintenance issues were identified, such as repairing the protective cover for well G-20 and replacing concrete pad at well D-3.
- **Cost of system and O&M** – Cost information was not available for the review.
- **Opportunities for optimization** – In addition to conducting maintenance activities associated with the minor issues identified during the site inspection, opportunities for optimizing the ground water monitoring program were identified after reviewing ground water monitoring reports and the statistical analysis report. Ground water is currently monitored on a quarterly basis, and most analytical results are below screening criteria or MCLs. Annual ground water monitoring would be sufficient to evaluate future trends in all wells. In addition, the list of analytes could be reduced to arsenic, barium, chromium, and manganese because iron, nickel, lead and vanadium data have, overall, consistently been below screening values and/or show a decreasing trend. According to the statistical analysis report data (URS 2003), barium and chromium are important because of the increasing concentrations of these parameters at a few Lower Zone wells. Arsenic is important because



a statistical analysis could not be completed due to the change in detection limit, and manganese is important because it remains consistently above its screening criteria in several wells. In the future, the ground water monitoring network could be expanded to include additional wells should the existence of an identifiable and sustainable plume be established. At this time, there is no indication that contaminants are migrating down gradient.

- **Early indicators of potential issues** – As described above, recent data from a few monitoring wells are above MCLs or screening criteria and do not show a decreasing trend. Data from other monitoring wells are below MCLs but show an increasing trend. Therefore, future monitoring is needed to evaluate whether degradation of ground water quality is occurring.
- **Implementation of institutional controls** – Institutional controls have been implemented in accordance with the ROD. A deed notice for the property was filed with the parish on June 16, 1998.

**Question B: Are the assumptions used at the time of remedy selection still valid?**

- **Changes in standards and to be considered** – There have been no changes that bear on the protectiveness of the selected remedy. If a contingency ground water remedy is implemented, then ground water cleanup standards will require evaluation.
- **Changes in exposure pathways** – There have been no changes that bear on the protectiveness of the selected remedy.
- **Changes in toxicity and other contaminant characteristics** – There have been no changes that bear on the protectiveness of the selected remedy. Although toxicity factors for barium, which is the primary contaminant of concern in soil, have been evaluated since 1994, numerical values have not changed.
- **Changes in risk assessment methodologies** – There have been no changes that bear on the protectiveness of the selected remedy.
- **Expected progress toward meeting RAOs** – The RAOs relating to contaminated soil have been met. Institutional controls associated with exposure to contaminated soil have been implemented. A deed notice for the property was filed with the parish on June 16, 1998.

**Question C: Has any other information come to light that could call into question the protectiveness of the remedy?**

No other information has been identified that calls the protectiveness of the selected remedy into question.

**Technical Summary**

According to documents and data reviewed, the site inspection, and the interviews, the remedy is functioning as intended by the 1994 ROD. There have been no changes in the physical conditions of the

site that would affect the protectiveness of the remedy. ARARs cited in the ROD have been met. There have been no changes in toxicity factors for the primary contaminants of concern, and there has been no change to the standardized risk assessment methodology that could affect the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

## 8.0 ISSUES

This section describes issues associated with the D.L. Mud site identified during the five-year review. The issues are summarized in Table 4. A description of the issues area as follows:

1. **Broken protective well cover** – The protective cover on well G-20 is broken.
2. **Cracked concrete well pad** – The concrete pad associated with well D-3 is cracked.
3. **Several potholes on primary site road** – Several potholes were observed on the primary site road that is used by area residents. Residents complained about road conditions during interviews.
4. **Ground water concentrations are above screening values or MCLs and show no observable trend or a decreasing trend**– According to laboratory analytical results, barium, chromium, iron, lead, manganese, and nickel have been detected in the ground water at concentrations exceeding screening criteria or the MCL during one or more sampling events. However, no observable trend or a decreasing trend has been shown for these contaminants. In addition, no increasing trend has been shown at any well that exceeded the screening value or MCL.
5. **Ground water concentrations with increasing trends and values below the MCL**- According to laboratory analytical results, concentrations of barium have been below the MCL for well D-1 and chromium has been below the MCL for wells D-3 and D-5. All three of these wells show an increasing trend. Arsenic has been detected at concentrations that are below the MCL; however, a statistical analysis could not be performed due to the change in detection limit.
6. **No down gradient wells**- No down gradient wells sampled to evaluate whether contaminants are migrating.

## 9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Table 5 summarizes recommendations and follow-up actions for the D.L. Mud site. The Performing Defendant is responsible for conducting follow-up actions, and EPA will provide oversight.

**TABLE 4**  
**ISSUES IDENTIFIED**

<b>Issue</b>	<b>Currently Affects Remedy Protectiveness (Yes/No)</b>
Broken protective well cover	No
Cracked concrete well pad	No
Several potholes on primary site road	No
Ground water concentrations are above screening values or maximum contaminant levels (MCLs) and show no observable trend or a decreasing trend	No
Ground water concentrations with increasing trends and values below the MCL	No
No down gradient wells	No

**TABLE 5**

**RECOMMENDATIONS AND FOLLOW-UP ACTIONS**

<b>Issue</b>	<b>Recommendations and Follow-Up Actions</b>	<b>Party Responsible</b>	<b>Oversight Agency</b>	<b>Milestone Date</b>	<b>Follow-Up Actions Affect Remedy Protectiveness (Yes/No)</b>
Broken protective well cover	Repair protective well cover on well G-20.	Performing Defendant	EPA	Within 3 months of final 5-year review report date	No
Cracked concrete well pad	Replace or repair concrete well pad at well D-3.	Performing Defendant	EPA	Within 3 months of final 5-year review report date	No
Several potholes on primary site road	The purpose and existence of the access road was to provide the responsible parties with direct access to the site for the purposes of remedial action and continued O&M. This road is located within the site property boundaries and is considered by the responsible parties to be private property. Interested parties should work with responsible parties and local government entities to determine what would be necessary to maintain the road for public use.	Governing Authority	EPA	Within 3 months of final 5-year review report date	No
Ground water concentrations are above screening values or MCLs and show no observable trend or a decreasing trend	Groundwater monitoring should continue on an annual basis for barium, chromium, and manganese. Iron, lead, nickel, and vanadium can be removed from the sampling list due to overall consistent concentration results below the EPA Region 6 human health medium-specific screening levels and/or the presence of decreasing trends.	Performing Defendant	EPA	2004 ground water monitoring events	No
Ground water concentrations with increasing trends and values below the MCL	Groundwater monitoring should continue on an annual basis for barium and chromium due to the increasing trends shown for wells D-1, D-3, and D-5. Arsenic monitoring should continue because a statistical analysis could not be completed.	Performing Defendant	EPA	2004 ground water monitoring events	No

**TABLE 5**

**RECOMMENDATIONS AND FOLLOW-UP ACTIONS**

<b>Issue</b>	<b>Recommendations and Follow-Up Actions</b>	<b>Party Responsible</b>	<b>Oversight Agency</b>	<b>Milestone Date</b>	<b>Follow-Up Actions Affect Remedy Protectiveness (Yes/No)</b>
No down gradient wells	Based on analytical data from site wells, the presence of an identifiable or sustainable plume has not been established; therefore, off-site migration is not a concern at this time. Although down gradient wells specific to the site are not included in the monitoring program, the GCVS site is located adjacent to D.L. Mud, and the wells associated with GCVS are monitored on a routine basis for the same trace elements (arsenic, barium and chromium). Possible contaminant migration related to both sites is evaluated annually. Manganese is not analyzed from wells on the GCVS; however, the presence of manganese as a solute in ground water is expected to be the result of natural reducing conditions. In the future, the ground water monitoring network could be expanded should the existence of an identifiable and sustainable plume be established. At this time, there is no indication that contaminants are migrating.	Performing Defendant	EPA	2004 ground water monitoring events	No

Notes:

- EPA U.S. Environmental Protection Agency
- GCVS Gulf Coast Vacuum Services
- MCL Maximum Contaminant Level
- O&M Operations and maintenance

## **10.0 PROTECTIVENESS STATEMENT**

Based on the information available during the five-year review, the selected remedy for the D.L. Mud site is currently protective of human health and the environment. For the remedy to remain protective in the long-term, ground water monitoring data need to be evaluated on a routine basis, and the deed notice needs to be enforced.

## **11.0 NEXT REVIEW**

The D.L. Mud site requires ongoing five-year reviews. The next review will be conducted within the next five years but no later than September 2008.

**APPENDIX A**  
**DOCUMENTS REVIEWED**  
**(One Page)**

## DOCUMENTS REVIEWED

- Dowell Schlumberger Incorporated. 1987. "Report of Decommissioning and Restoration, D.L. Mud Inc. Site, Abbeville, Louisiana." December.
- Radian International LLC (Radian). 1998. "Remedial Design and Remedial Action Workplan, D.L. Mud, Inc. Superfund Site, Abbeville, Louisiana." September.
- Radian. 1999. "Remedial Action Report." June 10.
- URS Corporation (URS). 2002. "Annual Report of Site Conditions, 2001/Year 3, Final Report, Revision 1, D.L. Mud, Inc. Site." August.
- URS. 2003. "Statistical Analysis Report, 2003/Year 5, D.L. Mud, Inc. Site, Abbeville, Louisiana." August.
- U.S. Environmental Protection Agency (EPA), Region 6. 1994. "Record of Decision, D.L. Mud, Inc., Superfund Site, Vermilion Parish, Louisiana." September.
- EPA. 1998. Consent Decree Civil Action No. CV98-0553. United States vs. The Dow Chemical Company. Federal Register. April 15.
- EPA. 1999. "Final Closeout Report, Vermilion Parish, Louisiana." March.
- EPA. 2003a. Integrated Risk Information System, Toxicological Profile for Barium. Available on-line at: <http://www.epa.gov/iris/index.html>.
- EPA. 2003b. Overview of D.L. Mud, Inc. Superfund Site. On-Line Address: <http://www.epa.gov/earth1r6/6sf/pdffiles/d-l-mud.pdf>. Accessed on July 7, 2003. March 5.
- EPA. 2003c. Letter Report Regarding Comments on the Annual Report of Site Conditions 2002/Year 4 and the Statistical Analysis Report 2003/Year 5. From Katrina Coltrain. To Carey Brannan, Dowell. May 6.
- EPA. 2003d. Personal Communication Regarding Barium Toxicity Factors as Listed in the EPA Integrated Risk Information System file. Telephone conversation between Dr. Choudhury, Superfund Technical Support Center, and Shannon Garcia, Tetra Tech. June 30.



**APPENDIX B**  
**SITE VISIT REPORT**  
**(38 Pages)**

**SITE VISIT REPORT FOR FIRST FIVE-YEAR REVIEW FOR  
D.L. MUD, INC. SUPERFUND SITE  
ABBEVILLE, VERMILION PARISH, LOUISIANA**

**Prepared for**

**United States Environmental Protection Agency  
Region 6  
Dallas, Texas**

Contract No.	:	68-W6-0037
Work Assignment No.	:	934-FR-FE-06ZZ
Date Prepared	:	September 30, 2003
Prepared by	:	Tetra Tech EM Inc.
Telephone No.	:	(214) 740-2014
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- A PHOTOGRAPHS
- B SITE VISIT CHECKLIST
- C SURVEYS

## ACRONYMS AND ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
D.L. Mud	D.L. Mud Inc.
EPA	U.S. Environmental Protection Agency
GCVS	Gulf Coast Vacuum Services
OSWER	Office of Solid Waste and Emergency Response
RA	Remedial action
RD	Remedial design
ROD	Record of Decision
Tetra Tech	Tetra Tech EM Inc.
URS	URS Corporation

## **1.0 INTRODUCTION**

Tetra Tech EM Inc. (Tetra Tech) received Work Assignment No. 934-FR-FE-06ZZ from U.S. Environmental Protection Agency (EPA), Region 6, under Response Action Contract No. 68-W6-0037. Under this work assignment, Tetra Tech was directed to conduct a five-year review of the remedial action (RA) implemented at the D.L. Mud, Inc. (D.L. Mud) Superfund site in Abbeville, Louisiana.

Tetra Tech visited the site on January 27 and 28, 2003, to assess whether all components of the selected remedy are operating in accordance with criteria established in the 1994 Record of Decision (ROD). This report provides background information on the site, summarizes site visit activities, and presents Tetra Tech's findings. References cited are listed at the end of this text. Exhibit A contains photographs taken during the site visit, and Exhibit B contains the five-year review site visit checklist completed by Tetra Tech. In addition, Exhibit C contains survey forms that document interviews conducted during the site inspection and throughout the five-year review period.

## **2.0 BACKGROUND**

The D.L. Mud site is located approximately three miles southwest of Abbeville, Vermilion Parish, Louisiana, immediately south of the Gulf Coast Vacuum Services (GCVS) Superfund site. The site covers approximately 12.8 acres and is bounded to the north by the GCVS site and to the east, south, and west by agricultural land with livestock grazing, crawfish farming, and crop production (EPA 1994). Approximately 2,600 people live within 3 miles of the site (EPA 2003). The site is generally flat and is located in the low-lying flatland of the Atlantic Gulf Coastal Plain. Levees associated with a former irrigation canal network bound the eastern and southern portions of the site and an abandoned irrigation canal transects the property from east to west. Irrigation water is now supplied by ground water and these former canals are used as drainage ditches or are diked and collect rainwater after heavy rain events. Surface water runoff from the northern portion of the site flows to the unnamed ditch that transects the site and continues to flow to the northeast, where the ditch merges with Coulee Galleque. The Coulee Galleque flows east until it forms a confluence with Coulee Kenny, which flows southeasterly to the Vermillion River north of the town of Perry. The southern portion of the site is poorly drained, with slopes less than ½ percent toward the southern former canal network. Surface water runoff from the southern portion of the site flows south to unnamed ditches that flow through the Noel Canal to the Vermillion River south of the town of Perry (EPA 1994).

The D.L. Mud site was put on the National Priorities List in October 1989. Following a remedial investigation and feasibility study, EPA signed a ROD for the site on September 22, 1994 (EPA 1994).

The remedial action objective for the D.L. Mud site is as follows:

To eliminate or reduce identified and/or potential risks by preventing the ingestion of barium-contaminated soils and by reducing the potential for migration of contaminants from both surface and subsurface soils to the ground water.

The remedy selected in the ROD included the following three components:

- Establishing and enforcing land use and deed notices/restrictions on the property to eliminate the potential for ingestion of barium-contaminated surface soils by hypothetical future residents
- Excavating and disposing of visually contaminated subsurface soil at an off-site disposal facility to eliminate the potential for migration of the contaminants into the ground water
- Monitoring ground water to ensure that waste excavation actions are successful and potential ground water degradation from residual surface soil contaminants does not occur

The RA began in 1998 after approval of the remedial design (RD)/RA work plan and was completed after the final inspection on February 17, 1999, which concluded that the selected remedy had been constructed and completed in accordance with the RD plans and specifications (Radian 1999). The final closeout report for the D.L. Mud site was submitted in June 1999 (EPA 1999).

Consistent with the remedy selected in the ROD, RA activities included (1) re-establishing locations of former impoundments that were identified during the RI; (2) excavating visually contaminated subsurface soil; (3) backfilling with off-site soils and unstained stockpiled soil that was confirmed clean through sampling; (4) demolishing a shed located on the northern portion of the site; (5) transporting and disposing of stained soil, drums, and rubbish encountered during excavation of stained soil and debris from demolition and site cleanup activities; (6) grading the site; and (7) enhancing site security. O&M activities include deed restrictions, site inspections, and ground water monitoring. Deed notices were placed in the property files on June 16, 1998. Site inspections have been conducted annually. Quarterly monitoring was initiated in 1999 and has continued through 2003 (Radian 1999; URS Corporation [URS] 2003).

Because concentrations of hazardous substances above health-based levels remain at the site, EPA must conduct a statutory review pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121(c) and as provided in the Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-02, “Structure and Components of Five-Year Reviews” (1991); OSWER Directive 9355.7-02A, “Supplemental Five-Year Review Guidance” (1994); “Second Supplemental Five Year Review Guidance” (1996); and OSWER Directive 9355.7-03B-P, “Comprehensive Five-Year Review Guidance” (EPA 2001). The site visit was conducted as part of the five-year review process.

### **3.0 SITE VISIT ACTIVITIES**

A site visit was conducted on January 27 and 28, 2003, to assess the condition of the site and the measures employed to protect human health and the environment from the contaminants still present at the site.

The following key individuals identified by EPA participated in the site visit:

- Katrina Coltrain, EPA
- Sarah Babcock, Tetra Tech
- Luis Vega, Tetra Tech
- Ronny Matte, Tetra Tech
- Byron Trahan, Tetra Tech
- Roger Lee, U.S. Geological Survey
- Trey Fortenberry, URS

The site visit included evaluating the condition of monitoring wells, postings, site fencing, and general site conditions. Photographs taken during the site visit are presented in Exhibit A, and the completed five-year review site visit checklist is presented in Exhibit B. The site visit is summarized below.

The weather during the site visit was sunny and cool. Evidence of recent precipitation such as wet areas was observed.

Monitoring wells were visually inspected during site inspection. All the wells were clearly labeled and all but two (D-1 and D-3) are protected from impact. The protective well cover on well G-20 was broken, and the concrete slab associated with well D-3 was cracked. Access restrictions, including fencing and signs, were visually inspected. No issues associated with the fencing and signs were noted. General site conditions were also visually inspected. Several potholes were observed on the primary site road that is used by area residents. Some settling of the former excavation was also noted.

#### **4.0 FINDINGS**

Most monitoring wells visually inspected were in good condition and clearly labeled. Wells D-1 and D-3 are not currently protected from impact and will need bollards installed to provide this protection. The well cover on well G-20 was broken and requires repair, and the concrete slab associated with well D-3 was cracked and needs to be replaced. Access restrictions, including fencing and signs, were in good condition and no vandalism was observed. Several potholes were observed on the primary site road that is used by area residents. There are areas in the former excavation locations that are settling and have ponding water. This settling may need repair if these areas continue to deteriorate.



## REFERENCES

- Office of Solid Waste and Emergency Response (OSWER). 1991. Directive 9355.7-02, "Structure and Components of Five-Year Reviews." May 23.
- OSWER. 1994. Directive 9355.7-02A, "Supplemental Five-Year Review Guidance." July 26.
- OSWER. 1996. Directive 9355.7-02A, "Second Supplemental Five Year Review Guidance." December 1.
- Radian International LLC. 1999. "Remedial Action Report." June 10.
- URS Corporation. 2003. "Statistical Analysis Report, 2003/Year 5, D.L. Mud, Inc. Site, Abbeville, Louisiana." August.
- U.S. Environmental Protection Agency Region 6 (EPA). EPA. 1994. "Record of Decision, D.L. Mud, Inc., Superfund Site, Vermilion Parish, Louisiana." September.
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- EPA. 2003. Overview of D.L. Mud, Inc. Superfund Site. On-Line Address: <http://www.epa.gov/earth1r6/6sf/pdffiles/d-l-mud.pdf>. Accessed on July 7, 2003. March 5.

**EXHIBIT A**  
**PHOTOGRAPHS**  
**(10 Pages)**

**EXHIBIT B**  
**SITE VISIT CHECKLIST**  
**(11 Pages)**

## FIVE-YEAR REVIEW SITE VISIT CHECKLIST

I. SITE INFORMATION			
<b>Site Name:</b> D.L. Mud Site	<b>Date of Inspection:</b> 1/27-1/28/03		
<b>Location and Region:</b> Abbeville, LA	<b>EPA ID:</b> LAD981058019		
<b>Agency, office, or company leading the five-year review:</b> EPA Region 6	<b>Weather/temperature:</b> Sunny and cool; high around 50 °F		
<b>Remedy Includes:</b> (Check all that apply)			
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Ground water pump and treatment		
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Surface water collection and treatment		
<input checked="" type="checkbox"/> Institutional controls	<input checked="" type="checkbox"/> Other (Monitored natural attenuation)		
<b>Attachments:</b> <input type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached (Figure 2 of report)			
II. INTERVIEWS (Check all that apply)			
<b>1. O&amp;M Site Manager</b> <u>Trey Fortenberry</u> <u>Project Manager, URS</u> _____ Name Title Date			
Interviewed: <input type="checkbox"/> by mail <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>NA</u>			
Problems, suggestions: <input checked="" type="checkbox"/> Report attached (Note: Survey form was e-mailed to Trey Fortenberry on January 30, 2003 and completed by the PRP representative and returned to the EPA.)			
<b>2. O&amp;M Staff</b> _____ Name Title Date			
Interviewed: <input type="checkbox"/> by mail <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			
Problems, suggestions: <input type="checkbox"/> Report attached			
<b>3. Local regulatory authorities and response agencies</b> (i.e.; State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.). Fill in all that apply.			
Agency <u>Vermilion Parish Police Jury</u>			
Contact <u>Michael Bertrand</u>	<u>Secretary and Treasurer</u>	<u>1/21/03</u>	<u>(337)898-4300</u>
Name	Title	Date	Phone no.
Problems, suggestions: <input checked="" type="checkbox"/> Report attached <u>Survey forms are in Exhibit C</u>			
Agency <u>LDEQ</u>			
Contact <u>Rich Johnson</u>	<u>State Representative</u>	<u>1/27/03</u>	<u>(225)765-0487</u>
Name	Title	Date	Phone no.

Problems, suggestions: <input checked="" type="checkbox"/> Report attached <u>Survey forms are in Exhibit C</u>			
<b>4. Other interviews (optional):</b> <input checked="" type="checkbox"/> Report attached to Five-Year Review Report			
Adjacent resident no. 1 was interviewed during the site inspection.			
(Additional interviews were conducted over the phone after the site inspection and are included in Exhibit C, along with survey forms for Mr. Bertrand, Mr. Johnson, and adjacent resident no. 1)			
<b>III. ON-SITE DOCUMENTS &amp; RECORDS VERIFIED (Check all that apply)</b>			
<b>1. O&amp;M Documents</b>			
<input type="checkbox"/> O&M manual (long term monitoring plan)	<input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
<input type="checkbox"/> As-built drawings	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks: _____			
<b>2. Site-Specific Health and Safety Plan</b>			
<input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			
<b>3. O&amp;M and OSHA Training Records</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			
<b>4. Permits and Service Agreements</b>			
<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" 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: _____			
<b>5. Gas Generation Records</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<b>6. Settlement Monument Records</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<b>7. Ground Water Monitoring Records</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
<b>8. Leachate Extraction Records</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<b>9. Discharge Compliance Records</b>			
<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			
<b>10. Daily Access/Security Logs</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____			

**IV. O&M COSTS**

**1. O&M Organization**

- State in-house       Contractor for State       PRP in-house  
 Contractor for PRP     Other \_\_\_\_\_

**2. O&M Cost Records (O&M cost information not available during inspection)**

- Readily available     Up to date       Funding mechanism/agreement in place  
 Original O&M cost estimate       Breakdown attached

Total annual cost by year for review period, if available

<u>Date</u>	<u>Date</u>	<u>Total Cost</u>		
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached
From _____	to _____	_____	-	<input type="checkbox"/> Breakdown attached

**3. Unanticipated or Unusually High O&M Costs During Review Period**

\_\_\_\_\_ O&M cost information not available during inspection \_\_\_\_\_

**V. ACCESS AND INSTITUTIONAL CONTROLS**       Applicable       N/A

**A. Fencing**

- 1. Fencing damaged**       Location shown on site map       Gates secured       N/A

Remarks: \_\_\_\_\_

**B. Other Access Restrictions**

- 1. Signs and other security measures**       Location shown on site map       N/A

Remarks: Signs include EPA and PRP contact information. Signs on every gate and along perimeter fences.

**C. Institutional Controls**

**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented  Yes  No  N/A  
Site conditions imply ICs not being fully enforced  Yes  No  N/A

Type of monitoring (e.g., self-reporting, drive by) Site inspections

Frequency Same frequency as groundwater monitoring

Responsible party/agency PRP Group/Dow Chemical Company and Dowell

Contact <u>Carey Brannan</u>	<u>PRP Group project manager, Dowell</u>	<u>6/16/98</u>	<u>(225)922-4450</u>
Name	Title	Date	Phone no.

Reporting is up-to-date  Yes  No  N/A

Reports are verified by the lead agency  Yes  No  N/A

Specific requirements in deed or decision documents have been met  Yes  No  N/A

Violations have been reported  Yes  No  N/A

Other problems or suggestions:  Report attached

**2. Adequacy**  ICs are adequate  ICs are inadequate  N/A

Remarks: \_\_\_\_\_

**D. General**

**1. Vandalism/trespassing**  Location shown on site map  No vandalism evident

Remarks: \_\_\_\_\_

**2. Land use changes onsite**  N/A

Remarks: Propose planting pine saplings to minimize bush hogging costs

**3. Land use changes offsite**  N/A

Remarks: \_\_\_\_\_

**VI. GENERAL SITE CONDITIONS**

**A. Roads**  Applicable  N/A

**1. Roads damaged**  Location shown on site map  Roads adequate  N/A

Remarks: However, roads appear to need gravel added to potholes and wet areas

**B. Other Site Conditions**

Remarks: Backfilled remedial action area is settling, especially at the ends

**VII. LANDFILL COVERS**

Applicable

N/A

**A. Landfill Surface**

**1. Settlement (Low spots)**  Location shown on site map  Settlement not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks: \_\_\_\_\_

**2. Cracks**  Location shown on site map  Cracking not evident  
Lengths \_\_\_\_\_ Widths \_\_\_\_\_ Depths \_\_\_\_\_  
Remarks: \_\_\_\_\_

**3. Erosion**  Location shown on site map  Erosion not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks: \_\_\_\_\_

**4. Holes**  Location shown on site map  Holes not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks: \_\_\_\_\_

**5. Vegetative Cover**  Grass  Cover properly established  No signs of stress  
 Trees/Shrubs (indicate size and locations on a diagram)  
Remarks: \_\_\_\_\_

**6. Alternative Cover (armored rock, concrete, etc.)**  N/A  
Remarks: \_\_\_\_\_

**7. Bulges**  Location shown on site map  Bulges not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
Remarks: \_\_\_\_\_

**8. Wet Areas/Water Damage**  Wet areas/water damage not evident  
 Wet areas  Location shown on site map  Areal extent \_\_\_\_\_  
 Ponding  Location shown on site map  Areal extent \_\_\_\_\_  
 Seeps  Location shown on site map  Areal extent \_\_\_\_\_  
 Soft subgrade  Location shown on site map  Areal extent \_\_\_\_\_  
Remarks: \_\_\_\_\_

**9. Slope Instability**  Slides  Location shown on site map  
 No evidence of slope instability Areal extent \_\_\_\_\_  
Remarks: \_\_\_\_\_



**B. Benches**  Applicable  N/A  
 (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

**1. Flows Bypass Bench**  Location shown on site map  N/A or okay  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**2. Bench Breached**  Location shown on site map  N/A or okay  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**3. Bench Overtopped**  Location shown on site map  N/A or okay  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**C. Letdown Channels**  Applicable  N/A  
 (Channel lined with erosion control mats, rip rap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

**1. Settlement**  Location shown on site map  No evidence of settlement  
 Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**2. Material Degradation**  Location shown on site map  No evidence of degradation  
 Material type \_\_\_\_\_ Areal extent \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**3. Erosion**  Location shown on site map  No evidence of erosion  
 Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**4. Undercutting**  Location shown on site map  No evidence of undercutting  
 Areal extent \_\_\_\_\_ Depth \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**5. Obstructions** Type \_\_\_\_\_  
 No obstructions  Location shown on site map  
 Areal extent \_\_\_\_\_ Size \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

**6. Excessive Vegetative Growth** Type \_\_\_\_\_  
 No evidence of excessive growth  Vegetation in channels does not obstruct flow  
 Location shown on site map Areal extent \_\_\_\_\_  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_

<b>D. Cover Penetrations</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>1. Gas Vents</b> <input type="checkbox"/> Active <input type="checkbox"/> Passive			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks: _____			
<b>2. Gas Monitoring Probes</b>			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks: _____			
<b>3. Monitoring Wells (within surface area of landfill)</b>			
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks: _____			
<b>4. Leachate Extraction Wells</b>			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks: _____			
<b>5. Settlement Monuments</b> <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A			
Remarks: _____			
<b>E. Gas Collection and Treatment</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>1. Gas Treatment Facilities</b>			
<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction	<input type="checkbox"/> Collection for reuse	
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks: _____			
<b>2. Gas Collection Wells, Manifolds, and Piping</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M			
Remarks: _____			
<b>3. Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A	
Remarks: _____			
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>1. Outlet Pipes Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A			
Remarks: _____			
<b>2. Outlet Rock Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A			
Remarks: _____			
<b>G. Detention/Sedimentation Ponds</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			

<b>1. Siltation</b>	Areal extent _____	Size _____
<input type="checkbox"/> N/A	<input type="checkbox"/> Siltation not evident	
Remarks: _____		
<hr/>		
<b>2. Erosion</b>	Areal extent _____	Depth _____
<input type="checkbox"/> Erosion not evident		
Remarks: _____		
<hr/>		
<b>3. Outlet Works</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks: _____		
<hr/>		
<b>4. Dam</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks: _____		
<hr/>		
<b>H. Retaining Walls</b>	<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
<hr/>		
<b>1. Deformations</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
Horizontal displacement _____		Vertical displacement _____
Rotational displacement _____		
Remarks: _____		
<hr/>		
<b>2. Degradation</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
Remarks: _____		
<hr/>		
<b>I. Perimeter Ditches/Off-Site Discharge</b>	<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
<hr/>		
<b>1. Siltation</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
Areal extent _____		Depth _____
Remarks: _____		
<hr/>		
<b>2. Vegetative Growth</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
<input type="checkbox"/> Vegetation does not impede flow		
Areal extent _____		Type _____
Remarks: _____		
<hr/>		
<b>3. Erosion</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
Areal extent _____		Depth _____
Remarks: _____		
<hr/>		
<b>4. Discharge Structure</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks: _____		

<b>VIII. VERTICAL BARRIER WALLS</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
<b>1. Settlement</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident	
Areal extent _____	Depth _____		
Remarks: _____			
<b>2. Performance Monitoring</b>	Type of monitoring _____		
<input type="checkbox"/> Performance not monitored	Frequency _____	<input type="checkbox"/> Evidence of breaching	
Head differential _____			
Remarks: _____			
<b>IX. GROUND WATER/SURFACE WATER REMEDIES</b>		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
<b>A. Ground Water Extraction Wells, Pumps, and Pipelines</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
<b>1. Pumps, Wellhead Plumbing, and Electrical</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks: _____			
<b>2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks: _____			
<b>3. Spare Parts and Equipment</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Good condition	<input type="checkbox"/> Requires upgrade	<input type="checkbox"/> Needs to be provided
Remarks: _____			
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
<b>1. Collection Structures, Pumps, and Electrical</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks: _____			
<b>2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks: _____			
<b>3. Spare Parts and Equipment</b>			
<input type="checkbox"/> Readily available	<input type="checkbox"/> Good condition	<input type="checkbox"/> Requires upgrade	<input type="checkbox"/> Needs to be provided
Remarks: _____			
<b>C. Treatment System</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A

**1. Treatment Train** (Check components that apply)

- Metals removal       Oil/water separation       Bioremediation  
 Air stripping       Carbon absorbers  
 Filters   fabric    
 Additive (e.g., chelation agent, flocculent) \_\_\_\_\_  
 Others \_\_\_\_\_  
 Good condition       Needs O&M  
 Sampling ports properly marked and functional  
 Sampling/maintenance log displayed and up to date  
 Equipment properly identified  
 Quantity of ground water treated annually \_\_\_\_\_  
 Quantity of surface water treated annually \_\_\_\_\_

Remarks: \_\_\_\_\_  
\_\_\_\_\_

**2. Electrical Enclosures and Panels** (Properly rated and functional)

- N/A       Good condition       Needs O&M

Remarks: \_\_\_\_\_  
\_\_\_\_\_

**3. Tanks, Vaults, Storage Vessels**

- N/A       Good condition       Proper secondary containment       Needs O&M

Remarks: \_\_\_\_\_  
\_\_\_\_\_

**4. Discharge Structure and Appurtenances**

- N/A       Good condition       Needs O&M

Remarks: \_\_\_\_\_  
\_\_\_\_\_

**5. Treatment Building(s)**

- N/A       Good condition (esp. roof and doorways)       Needs repair  
 Chemicals and equipment properly stored

Remarks: \_\_\_\_\_  
\_\_\_\_\_

**6. Monitoring Wells** (Pump and treatment remedy)

- Properly secured/locked       Functioning       Routinely sampled       Good condition  
 All required wells located       Needs O&M       N/A

Remarks: \_\_\_\_\_  
\_\_\_\_\_

**D. Monitored Natural Attenuation (or Groundwater Monitoring)**  Applicable       N/A

**1. Monitoring Wells** (for groundwater monitoring)

- Properly secured/locked       Functioning       Routinely sampled (quarterly)       Good condition  
 All required wells located       Needs O&M       N/A

Remarks: Monitored natural attenuation is not being implemented at the site; however, groundwater monitoring wells, which are part of the remedy, were inspected. Well G-20 needs hinge replaced on protective cover (to be repaired next quarter); well D-3 has cracked concrete slab.

**X. OTHER REMEDIES**

If there are remedies applied at the site that are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

## XI. OVERALL OBSERVATIONS

### A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The goal of the long-term remedy is to monitor groundwater to determine if degradation of groundwater is occurring. No major issues were observed during the site inspection. Minor issues include a broken well cover at well G-20, cracked concrete slab at well D-3, and potholes and wet areas on site road. Remedy is effective and functioning as designed.

### B. Adequacy of O&M

O&M appeared to be adequate.

### C. Early Indicators of Potential Remedy Failure

None observed

### D. Opportunities for Optimization

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

None other than regular well and site maintenance

**EXHIBIT C**

**SURVEYS**

**(14 Pages)**

**TABLE C-1**

**INTERVIEW DOCUMENTATION**

<b>Name</b>	<b>Title/Position</b>	<b>Organization</b>	<b>Date of Interview</b>
Michael J. Bertrand	Secretary/Treasurer	Vermilion Parish Police Jury	January 21, 2003
Carey Brannan	PRP Group Representative	Dowell	January 21, 2003
Rich Johnson	State Representative	LDEQ	January 27, 2003
Wilma Subra	TAG Representative	Subra Company	May 15, 2003
Adjacent Resident No. 1	Not applicable	Not applicable	February 3, 2003
Adjacent Resident No. 2	Not applicable	Not applicable	January 21, 2003

Notes:

LDEQ Louisiana Department of Environmental Quality

PRP Potentially responsible party

TAG Technical assistance grant



**SUPERFUND SITE SURVEY - FORM B**

<b>Site Name:</b> D.L. Mud Site	<b>EPA Work Assignment No.:</b> 934-FRFE-06ZZ
<b>Subject:</b> 5-Year Review Local Authority Survey	<b>Date:</b> January 21, 2003

**Contact Made By:**

<b>Name:</b> Katrina Coltrain	<b>Title:</b> Remedial Project Manager	<b>Organization:</b> EPA
<b>Telephone No.:</b> (214) 665-8143 <b>E-Mail:</b> coltrain.katrina@epa.gov	<b>Street Address:</b> 1455 Ross Avenue, Suite 1200 <b>City, State, Zip:</b> Dallas, Texas 75202	
<b>Name:</b> Luis Vega	<b>Title:</b> Project Manager	<b>Organization:</b> Tetra Tech EM Inc.
<b>Telephone No.:</b> (214) 740-2007 <b>E-Mail:</b> luis.vega@ttemi.com	<b>Street Address:</b> 350 N. St. Paul St., Suite 2600 <b>City, State, Zip:</b> Dallas, Texas 75201	

**Individual Contacted:**

<b>Name:</b> Mr. Michael J. Bertrand	<b>Title:</b> Secretary / Treasurer	<b>Organization:</b> Vermillion Parish Police Jury
<b>Telephone No.:</b> (337) 898-4300 <b>E-Mail:</b> vermilionppj@yahoo.com	<b>Street Address:</b> 100 N. State St., Suite 200 <b>City, State, Zip:</b> Abbeville, LA 70510	

**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Sarah Babcock by February 28, 2003.

1. What is your impression of the project (general sentiment)?  
  
The project has been satisfactorily completed.
  
2. Has your office conducted routine communications or activities (site visits, inspections, reporting activities, etc.) regarding the site? If so, please provide the purpose and results.  
  
Not at present.
  
3. Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? If so, please provide details of the events and the results of the responses.  
  
The use of road through site by adjoining landowners. Request for grading and dressing of road with material.

**SUPERFUND SITE SURVEY - FORM B (Continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Local Authority Survey

**Date:** January 21, 2003

**Survey Questions (Cont.)**

4. Do you feel well informed about the site's activities and progress?

No contact with this office since closeout ceremony. No information has been provided relative to monitoring reports, etc.

5. Have there been any changes in State laws and regulations that may impact the protectiveness of the ground water or soil remedies?

None to my knowledge. However, a state water policy commission has been established to address this matter (water policy).

6. Has the site been in compliance with permitting and reporting requirements?

Unknown.

7. Do you have any comments, suggestions, or recommendations regarding this site's management or operation?

Information should be provided regarding monitoring frequency and reporting of test results to the Vermilion Parish Police Jury (local governing body). Notification of any site visits, etc.

**SUPERFUND SITE SURVEY - FORM C**

<b>Site Name:</b> D.L. Mud Site	<b>EPA Work Assignment No.:</b> 934-FRFE-06ZZ
<b>Subject:</b> 5-Year Review Operation and Maintenance Survey	<b>Date:</b> January 21, 2003

**Contact Made By:**

<b>Name:</b> Katrina Coltrain	<b>Title:</b> Remedial Project Manager	<b>Organization:</b> EPA
<b>Telephone No.:</b> (214) 665-8143 <b>E-Mail:</b> coltrain.Katrina@epa.gov	<b>Street Address:</b> 1455 Ross Avenue, Suite 1200 <b>City, State, Zip:</b> Dallas, Texas 75202	
<b>Name:</b> Luis Vega	<b>Title:</b> Project Manager	<b>Organization:</b> Tetra Tech EM Inc.
<b>Telephone No.:</b> (214) 740-2007 <b>E-Mail:</b> luis.vega@ttemi.com	<b>Street Address:</b> 350 N. St. Paul St., Suite 2600 <b>City, State, Zip:</b> Dallas, Texas 75201	

**Individual Contacted:**

<b>Name:</b> Carey Brannan	<b>Title:</b> Project Manager	<b>Organization:</b> Dowell
<b>Telephone No.:</b> (225) 922-4450 <b>E-Mail Address:</b>	<b>Street Address:</b> 8550 United Plaza Blvd., Suite 601 <b>City, State, Zip:</b> Baton Rouge, LA 70809	

**Survey Questions**

Should you choose to respond, please return your survey in postal service to Luis Vega by February 14, 2003.

1. What is your impression of the project (general sentiment)?

The very best Superfund Site that I have been involved with.

2. Please describe the on-site operation and maintenance (O&M) presence, including staff, frequency of site inspections, and O&M activities.

O&M activities were conducted by the performing defendants on a quarterly basis. O&M components include the work necessary to maintain the effectiveness of the constructed remedial action in accordance with the Scope of Work, Section IV, Paragraph C-Operations & Maintenance. These activities included maintaining the integrity of land use restrictions and fencing, and reporting on groundwater monitoring. These activities were overseen by URS Corporation and subcontractors of URS Corporation.

**SUPERFUND SITE SURVEY - FORM C (Continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation and Maintenance Survey

**Date:** January 21, 2003

**Survey Questions (Continued)**

3. Please describe any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last 5 years. Do they affect the protectiveness or effectiveness of the remedy?

The original specified sampling list had been reduced to a limited number of specific analytes. Sampling protocol was modified for the collection of a better representative sample. These changes produced a reduced amount of data and a more accumulated data set for the site.

4. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last 5 years? If so, please provide details.

None encountered at this point.

**SUPERFUND SITE SURVEY - FORM C (Continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation and Maintenance Survey

**Date:** January 21, 2003

**Survey Questions (Cont.)**

5. Can you provide insight to potential O&M problems?

Not at present.

6. Do you have any comments, suggestions, or recommendations regarding the project?

The cooperation of the EPA Region VI staff and all participants has been excellent.

**SUPERFUND SITE SURVEY - FORM B****Site Name:** D.L. Mud Site**EPA Work Assignment No.:** 934-FRFE-06ZZ**Subject:** 5-Year Review Local Authority Survey**Date:** January 27, 2003**Contact Made By:****Name:** Katrina Coltrain**Title:** Remedial Project Manager**Organization:** EPA**Telephone No.:** (214) 665-8143**E-Mail:** coltrain.katrina@epa.gov**Street Address:** 1455 Ross Avenue, Suite 1200**City, State, Zip:** Dallas, Texas 75202**Name:** Luis Vega**Title:** Project Manager**Organization:** Tetra Tech EM Inc.**Telephone No.:** (214) 754-2007**E-Mail:** luis.vega@ttemi.com**Street Address:** 350 N. St. Paul St., Suite 2600**City, State, Zip:** Dallas, Texas 75201**Individual Contacted:****Name:** Rich Johnson**Title:** State Representative**Organization:** LDEQ**Telephone No.:** 225-765-0487**E-Mail:** rich\_j@deq.state.la.us**Street Address:** P.O. Box 82282**City, State, Zip:** Baton Rouge, LA 70884-2282**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Sarah Babcock by February 28, 2003.

1. What is your impression of the project (general sentiment)?

I think the job has gone very well.

2. Has your office conducted routine communications or activities (site visits, inspections, reporting activities, etc.) regarding the site? If so, please provide the purpose and results.

We have been on the site during most sampling events and most remedial activities.

3. Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? If so, please provide details of the events and the results of the responses.

None.

**SUPERFUND SITE SURVEY - FORM B (Continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Local Authority Survey

**Date:** January 27, 2003

**Survey Questions (Cont.)**

4. Do you feel well informed about the site's activities and progress?

Yes.

5. Have there been any changes in State laws and regulations that may impact the protectiveness of the ground water or soil remedies?

No.

6. Has the site been in compliance with permitting and reporting requirements?

Yes

7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

No, the EPA has done an excellent job keeping LDEQ informed of any activities, and notifying us of planned actions for our information and concurrence.

**SUPERFUND SITE SURVEY - FORM A**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** May 15, 2003

**Contact Made By:**

**Name:** Katrina Coltrain

**Title:** Remedial Project Manager

**Organization:** EPA

**Telephone No.:** (214) 665-8143

**E-Mail:** coltrain.katrina@epa.gov

**Street Address:** 1455 Ross Avenue, Suite 1200

**City, State, Zip:** Dallas, Texas 75202

**Name:** Luis Vega

**Title:** Project Manager

**Organization:** Tetra Tech EM Inc.

**Telephone No.:** (214) 754-2007

**E-Mail:** luis.vega@ttemi.com

**Street Address:** 350 N. St. Paul St., Suite 2600

**City, State, Zip:** Dallas, Texas 75201

**Individual Contacted:**

**Name:** Wilma Subra

**Title:** TAG Representative

**Organization:** Subra Company

**Telephone No.:** (337) 367-2216

**E-Mail:**

**Street Address:** P.O. Box 9813

**City, State, Zip:** New Iberia, LA 70562

**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Sarah Babcock by February 14, 2003.

1. What is your impression of the project (general sentiment)?

In general, contamination left onsite was biggest concern.

2. What effect have site operations had on the surrounding community

Not much detrimental, some dust. Citizens informed throughout process. Not much increase in traffic.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please provide details.

Not at this time.



**SUPERFUND SITE SURVEY - FORM A (continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** May 15, 2003

**Survey Questions (Cont.)**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

No. Neighbors would know better.

5. Do you feel well informed about the site's activities and progress?

Yes, throughout cleanup, but not at this time.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

None.

**SUPERFUND SITE SURVEY - FORM A**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** February 3, 2003

**Contact Made By:**

**Name:** Katrina Coltrain

**Title:** Remedial Project Manager

**Organization:** EPA

**Telephone No.:** (214) 665-8143

**E-Mail:** coltrain.katrina@epa.gov

**Street Address:** 1455 Ross Avenue, Suite 1200

**City, State, Zip:** Dallas, Texas 75202

**Name:** Luis Vega

**Title:** Project Manager

**Organization:** Tetra Tech EM Inc.

**Telephone No.:** (214) 754-2007

**E-Mail:** luis.vega@ttemi.com

**Street Address:** 350 N. St. Paul St., Suite 2600

**City, State, Zip:** Dallas, Texas 75201

**Individual Contacted:**

**Name:** Adjacent Resident No. 1

**Title:** Not applicable

**Organization:** Not applicable

**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Sarah Babcock by February 14, 2003.

1. What is your impression of the project (general sentiment)?

No response.

2. What effect have site operations had on the surrounding community

The in and out of traffic on the horrible road, especially after a rain. The whole crew is famous for this. Every time it rains, the crew shows up and makes road messier.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please provide details.

Same as above, the problem with the road and pot holes

**SUPERFUND SITE SURVEY - FORM A (continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** February 3, 2003

**Survey Questions (Cont.)**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

No response

5. Do you feel well informed about the site's activities and progress?

We had to go on-line to get real details. If we have had any questions, we have stopped and everyone we spoke with has answered our question or directed us to answers.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

We would like some help with the road at least filling in the potholes. Especially since workers travel it quite often after a rain. We have lived here for over a year and workers are here quite often using the road.

**SUPERFUND SITE SURVEY - FORM A**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** January 21, 2003

**Contact Made By:**

**Name:** Katrina Coltrain

**Title:** Remedial Project Manager

**Organization:** EPA

**Telephone No.:** (214) 665-8143

**E-Mail:** coltrain.katrina@epa.gov

**Street Address:** 1455 Ross Avenue, Suite 1200

**City, State, Zip:** Dallas, Texas 75202

**Name:** Luis Vega

**Title:** Project Manager

**Organization:** Tetra Tech EM Inc.

**Telephone No.:** (214) 754-2007

**E-Mail:** luis.vega@ttemi.com

**Street Address:** 350 N. St. Paul St., Suite 2600

**City, State, Zip:** Dallas, Texas 75201

**Individual Contacted:**

**Name:** Adjacent Resident No. 2

**Title:** Not applicable

**Organization:** Not applicable

**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Sarah Babcock by February 14, 2003.

1. What is your impression of the project (general sentiment)?

Doesn't bother him one way or the other.

2. What effect have site operations had on the surrounding community

Will the fence stay up permanently? Police jury may have Gulf Coast property deeded. Gravel Road is D.L. Mud/Gulf Coast owned and maintenance is up to PRPs.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please provide details.

No

**SUPERFUND SITE SURVEY - FORM A (continued)**

**Site Name:** D.L. Mud Site

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** January 21, 2003

**Survey Questions (Cont.)**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

No hunters, trespassers, vandalism.

5. Do you feel well informed about the site's activities and progress?

Yes.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Shallow well does not drink it.