RCRA FACILITY INVESTIGATION SWMU 2 – INACTIVE LANDFILL INTERIM REPORT

Prepared for
Vicksburg Chemical Company
Vicksburg, Mississippi

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Vicksburg Chemical Company (VCC) retained URS Corporation (URS) to perform activities associated with a RCRA corrective action program. The corrective action program is in response to a Consent Decree which became effective July 1, 1991. The Consent Decree requires that a RCRA Facility Investigation (RFI) be conducted at the Vicksburg, Mississippi manufacturing facility.

The purpose of the RFI is to determine the nature and extent of releases of hazardous wastes and/or constituents from regulated units, solid waste management units (SWMUs), and other areas of concern (AOCs) at the facility and to gather all necessary data to support any corrective action required.

The RFI constitutes the second phase of the RCRA corrective action program. The program's first phase consists of the RCRA Facility Assessment (RFA) which is conducted by the EPA and precedes the RFI. The RFI itself is divided into several separate tasks. The tasks include the Preliminary Report, the RFI Work Plan, the Facility Investigation, and the Investigative Analysis Report (RFI Report). Subsequent phases of the RCRA corrective action program concern defining and implementing any needed measures that will protect human health and the environment. In addition, a Groundwater Assessment (GWA) Work Plan, a Closure Plan for SWMU 1 and SWMU 17, and Annual Groundwater Assessment Reports are required by the Consent Decree.

VCC submitted the Preliminary Report and Closure Plan for SWMU 1 and SWMU 17, and subsequently updated the Preliminary Report. The Preliminary Report and Closure Plan for SWMU 1 and SWMU 17 have been approved. VCC submitted the RFI Work Plan and the GWA Work Plan and has updated both plans.

Additionally, VCC has published documents describing expedited investigative and corrective action activity at various SWMUs. The activity was expedited because of VCC's plans to construct new manufacturing facilities and also utilize some of the SWMU areas for storage, transportation, or other related activity. The following is a tabulation of the publications:

SWMU ACTIVITY			
Report	**Date**	**Status**	**Comment**
RFI Work Plan SWMUs 9 and 16	August 1994	Submitted	--
RFI Report SWMUs 9 and 16	September 1994	Submitted	--

SWMU ACTIVITY			
Report	**Date**	**Status**	**Comment**
SWMU 23 North Pond RFI Work Plan FRI Report	October 1994	Submitted	14 piezometers were installed.
Closure Plan SWMUs 1 and 17	February 1995 (Modified 10-26-95)	Approved by the U.S. EPA and MSDEQ	--
RFI Work Plan Entire Site	June 1996	Under Review (modified 12-16-99)	Incorporated investigative phase of "Closure Plan SWMUs 1 and 17".
GWA Work Plan Entire Site	June 1996	Under Review (modified 12-16-99)	--
RFI Expedited Work Plan SWMUs 12, 11, 15, 16, 1 and 17	January 1997	Submitted	VCC planned to expand manufacturing capability into SWMU 12, 11 and 15 area or SWMU 16, 1 and 17 area.
RFI Report, Corrective Measures Study, RCRA Corrective Measures Implementation Plan SWMUs 16, 1 and 17	June 1997	Approved by the U.S. EPA and MSDEQ	--
Corrective Action Management Unit Application	June 1997	Approved by the U.S. EPA and MSDEQ	--
RFI Report SWMUs 12, 11 and 15	April 1998	Submitted	--
Corrective Measures Implementation Plan SWMUs 12, 11 and 15	April 1998 (as amended July 15,1 998)	Submitted	To be revised by 11-15-00
Corrective Action Observation Confirmatory Sampling and Analysis SWMUs 1 and 17	July 1998	Submitted	--
Arsenic Data Sets Arsenic Data Sets – Addendum	October 15, 1998 October 26, 1998	Submitted Submitted	Evaluation of arsenic background data.
SWMU 9 Corrective Action Observation	March 11, 1999	Submitted	--
Observations and Sampling of Ditch	September 8, 1999	Submitted	Surficial dinoseb contamination of soil noted during excavation of a ditch for a new water drainage line.
Response to July 3, 1999 Comments by the U.S. EPA on the "Amended and Supplemental Groundwater Assessment Work Plan"	July 31, 2000	Submitted	Summarized previously written description of SWMUs and work accomplished at each SWMU. Additionally responded to questions.

This document is an RFI Report related to SWMU 2 and should be viewed as a portion of the overall plant-wide RFI Report. This document, which shall be referred to as the Interim SWMU 2 RFI Report, describes the activities and the results of analyses of samples obtained during the execution of the deep boring work at SWMU 2 described in the Amended and Supplemental RFI Work Plan (December 1999). The discussion and results in this report are limited to the following areas:

- The top of SWMU 2 and deep borings program represented by locations LS-1, LS-2, LS-3, LS-4, and LS-5 on Figure 1.

The Interim SWMU 2 RFI Report has been compiled at the conclusion of the field investigation. The report includes the following:

- Summary of relevant portions of the RFI Work Plan;
- Summary of findings including discussion of results, and any new significant issues that would impact the RFI;
- Conclusions; and
- Supporting analytical and field data and appropriate drawings, tables, figures, maps, cross-sections, and other diagrams as needed to allow for a clear understanding of the nature and extent of any contamination that exists at the site.

The publications listed in Section 1 provide an overview of the investigations and analyses previously undertaken to characterize the potential contaminants of concern and the environmental setting in and around the plant site, including SWMU 2. Information includes:

- Site background information
- Facility's history and historical data
- Facility's environmental setting
- Boundaries of SWMUs and AOCs
- Surface SWMUs not requiring further investigation
- Characterization of waste sources to fullest extent possible from available data
- Potential receptor population

SWMU 2 is located on Figure 1. SWMU 2 is a hill with a natural elevation approximately 30 feet above immediate surrounding areas. A landfill and four pits or ponds were constructed on the hill and utilized from 1972 to 1975. One pit was constructed to store dinoseb process wastewater. Three pits were used as disposal locations for pallets, empty fiber and steel drums. In 1977 many of the drums in the pits, but not the landfill, were removed and disposed off-site. The location of the closed pits and closed landfill are shown on Figure 1. The locations are approximate and based on a March, 1979 aerial photograph. The boundary lines of the pits were partially destroyed during regrading efforts in late 1979. In 1979 all the pits were drained, regraded so the hill was flattened and covered with a soil cap. Some of the soil was obtained off-site and placed on the landfill area. In 1983, there was additional grading and capping of the entire area consistent with an engineered plan approved by the MSDNR. In 1988 the SWMU 3 wastewater ponds, which are adjacent to SWMU 2, were lined and a repository for pond sediments (SWACA) was constructed. The SWACA was constructed in the pond location denoted by boring LS-3. The sediments from the SWMU 3 wastewater ponds and most of the sediment of the LS-3 pond are within the SWACA. The pond lining and SWACA construction is consistent with RCRA guidelines.

2.1 RFI OBJECTIVES

The objective for the RFI is to provide procedures for collecting information as necessary to protect human health and the environment and then to obtain the information. A secondary objective is the evaluation of areas in the South Plant in order that VCC might ultimately be able to constructively utilize some of the area.

2.2 RFI RATIONALE

The RFI rationale in choosing sample points is based on VCC's process knowledge of the historical usage of the SWMUs. The historical usage is discussed above.

The information to be gathered during the SWMU 2 RFI includes the following:

- The vertical and horizontal extent of releases that have or are occurring within the SWMU boundaries which could potentially impact human health or the environment.

- The transport mechanisms, rates, and pathways for migration of hazardous constituents from SWMU areas.

The horizontal extent of releases within the SWMU 2 boundary is limited by the natural shape of the hill. The hill is approximately 30 feet higher than immediately surrounding areas, flattened on the top and has steep slopes. Due to the use of the hill for landfills, pits and ponds from 1972 through 1975 and the regrading and filling during closure in late 1979, it is likely that no subsurface portions of the hill is completely free of contamination.

There are two potential transport mechanisms for migration of hazardous constituents from SWMU 2. One is transport via surface erosion. The cap on SWMU 2 now prevents such transport; however, transport could have occurred prior to 1983. A likely pathway is the drainage area between the railroad track and SWMU 2. The other method of transport is by vertical leaching to the groundwater aquifer underneath SWMU 2. The leaching is now inhibited by the cap, but the mechanism was certainly available prior to late 1979.

As noted in Section 2 the RFI objective is to obtain information as necessary to protect human health and the environment. A sampling program was established to obtain samples representative of the highest concentrations of contamination present in SWMU 2.

3.1 SAMPLING RATIONALE

The sampling locations were established by examining aerial photographs of SWMU 2 that were taken prior to the regrading in late 1979. The former pits and landfill were located on the plan view of SWMU locations and presented as Figure 1 "SWMU Locations, RFI Soil and Concrete Sample Points, GWA Monitor Well Locations". Boring locations were chosen that were adjacent to or through the closed out areas. The locations are shown as LS1, LS2, LS3, LS4, and LS5 on Figure 1.

SWMU 2 was investigated for a release of hazardous constituents leaching into the soils and uppermost groundwater. Continuous sampling at the five locations shown on Figure 1 were performed until groundwater was reached at 90 to 100 feet elevation. Groundwater samples were obtained. Three soil samples were submitted for chemical analysis from each boring. One sample was taken from the 4-foot increment immediately above the uppermost groundwater zone and another was taken from the initial 4-foot increment. An additional sample was taken for analysis. The additional sample chosen was that which represents the 4-foot increment with the highest visual or olfactory contamination evident by field observation. A PID was used to assist in the field observation. The soil sampling determined the vertical extent of the contamination to groundwater.

The maximum horizontal extent of the contamination in the uppermost 30 feet of soil is defined by the natural boundary of the SWMU 2 edge. In order to determine if through surface water runoff and erosion, hazardous constituents have been further released horizontally from SWMU 2, seven shallow (hand auger) borings will be taken in the runoff area west of SWMU 2 and sloped toward the southwest. The hand auger borings will be 2½ feet in depth. A sample will be obtained in the 6- to 12-inch below ground surface (bgs) elevation and the 24- to 30-inch bgs elevation. The samples points are located on Figure 1; however, the samples are to be obtained during the plant wide RFI. The interim investigation focused directly on the "hill area".

3.2 ANALYTICAL RATIONALE

Samples obtained from the borings were submitted for analysis of compounds on the Toxic Compound List, the Toxic Analyte List, atrazine, cyanazine and dinoseb. The total list is to be found in the QAP, which is Appendix A of the RFI Work Plan and is also found in Appendix H of the GWA Work Plan. Results of analyses are reported in Section 7 of this report.

The surface run-off samples to be obtained during the plant wide RFI will be analyzed for the same parameters noted above.

3.3 SAMPLING PROCEDURES

Samples of soil were obtained utilizing a geoprobe. The geoprobe contained a clear plastic tube. A new tube was used for each thrust of the geoprobe. Each thrust penetrated to 4 feet thereby filling the plastic tube with a continuous 4-foot core that was examined and logged. A copy of the logs are provided as Attachment 1. The soil samples were transferred to sample bottles, appropriately labeled, and placed on ice for transport to the laboratory.

Groundwater samples were obtained from each of the five locations. PVC pipe was inserted into each boring. Boring LS1 was provided with subsurface casing since there was some evidence that there might be perched water above the groundwater table. (There was no such evidence at the other boring locations.) The PVC pipes were fitted with 5-foot long screens. Samples were obtained with a pump and/or bailer. The formation at each location was very slow at yielding groundwater.

After completion of the sampling, borings LS2 and LS4 were removed from further service by plugging and abandoning the locations. They were located within the area enclosed by a temporary berm. The temporary berm was constructed to contain sediments from the lined wastewater treatment impoundments. The sediments were subsequently pumped to the bermed area to be decanted from water and allowed to dry. Piezometers remain at boring locations LS1, LS3 and LS5

The schedule of relevant events are as follows:

- July 31, 2000 – Submit Response Document to U.S. EPA and MSDEQ. The Response Document provides responses to questions raised on the Groundwater Assessment Work Plan. The responses included a summary of all the RFI work for each SWMU since the signing of the Consent Decree in 1991.

- August 1, 2000 – Meet at Vicksburg Chemical to review 1979 aerial photographs and map out boring locations.

- August 2-3, 2000 – Advance borings to groundwater at the five locations LS1, LS2, LS3, LS4, and LS5. Obtain appropriate soil samples and ship soil samples to the laboratory.

- August 4-6, 2000 – Install temporary groundwater well/piezometers to obtain groundwater samples and piezometric elevations. Obtain groundwater samples and ship groundwater samples to the laboratory.

- September 1-29, 2000 – Receive results of analyses to review, tabulate and include within the SWMU 2 Interim RFI Report.

The Project Management Plan consists of the following elements:

- Project task definition
- Specific personnel positions within the project organizational structure

5.1 PROJECT TASK DEFINITION

VCC has retained the services of URS to develop the RFI and GWA Work Plans to the satisfaction of the EPA and MSDEQ and assist VCC in implementing the work plans.

5.2 PROJECT PERSONNEL

Duties of key personnel are described below.

5.2.1 U.S. EPA and MSDEQ Project Coordinator

The U.S. EPA and MSDEQ project coordinators or designated agents will observe work plan activities to any extent deemed necessary to confirm that the requirements of the Consent Decree, and the RFI Work Plan are met.

5.2.2 Project Director

The Project Director is Mr. Steve Boswell. He is an employee of and is the official representative for VCC. He is in charge of administration of the work and the completion of the project.

5.2.3 URS Project Manager

The URS Project Manager develops the plans required by the Consent Decree and oversees work implementing the Work Plan on behalf of VCC, and is the primary contact with VCC. The URS Project Manager is Richard D. Karkkainen. Mr. Karkkainen is a Principal Environmental Engineer in URS.

5.2.4 URS Field Investigation Site Coordinator

The URS Field Investigation Site Coordinator will handle day to day activities and coordinate them with other RFI and GWA activities. He will coordinate efforts and oversee their implementation. The Project Manager is expected to fulfill this role. He will be assisted by Dean Lowe, a geologist with 40 years of experience. Mr. Lowe is a Principal Geologist associated with Petra Environmental the geo-probe subcontractor.

5.2.5 Health and Safety Officer

A Health and Safety (H & S) officer will be responsible for the administration and implementation of the site Health and Safety for Groundwater Assessment activities. The H & S Officer will coordinate efforts through a Site Safety Officer. The Site Safety Officer will coordinate effort with the VCC safety personnel. The Project Manager may fulfill this role. A Health and Safety Plan is found in Appendix C of the Amended and Supplemental RFI Work Plan, December 1999. The H & S officer will have the overall responsibility for safety and health and will:

- Ensure that and employee medial surveillance program which meets the requirements of 29 CFR 1910.120 is instituted and maintained.

- Be responsible for the initial pre-construction indoctrination of all on-site personnel with regard to the H & S Plan and other safety requirements to be observed during the construction, including but not limited to:

  - potential hazards
  - personal hygiene principles
  - personnel protective equipment
  - respiratory protection equipment usage and fit testing, and
  - emergency response including site evacuation, dealing with fire and medical situations

- Be responsible for the maintenance of separate exclusion, contamination reduction, and support zones if needed as described in the Contractor's H & S Plan and on the drawings.

- Ensure that personnel exposure air monitoring, if needed, is properly conducted and recorded.

- During on-site activity, maintain a recordkeeping system which will include daily records of all site activity, waste quantities produced, waste transportation activity information, laboratory results, and other information.

5.2.6 QA/QC Manager

The QA/QC Manager will be responsible for coordination with the analytical laboratory and for the validation of data. Mr. Rodney Culpeper, analytical chemist and manager of Magnolia Scientific Laboratory, is QA/QC Manager.

The following information describes the environmental setting on a regional and local basis with an emphasis on SWMU 2.

6.1 REGIONAL GEOLOGY

The Vicksburg area lies on the eastern flank, near the axis, of the Mississippi Embayment, containing unconsolidated sediments of Cretaceous to Quaternary Age, the sediments thicken in the structural trough toward the axis of the Embayment and the Gulf of Mexico.

Wind-borne silty sediments, named Pleistocene loess, were deposited in the Vicksburg area. The Pleistocene loess in the Vicksburg area is a homogeneous, massive silt with variable clay content. The loess underlies the ground surface through the local region. Loess generally is characterized by a higher vertical permeability in comparison to its horizontal permeability.

Underlying the Pleistocene loess is the Oligocene Vicksburg formation. This formation consists of alternating beds of sandy marl, clay marl, montmorillonitic clay and thin beds of limestone.

6.2 SITE GEOLOGIC FEATURES OF THE PLANT SITE

Developers International Services Corporation (DISC) provided the initial descriptions of the geology of the site in a November 1981 report "Hydrogeological Investigation." A second description was provided by IT Corporation in a January 1985 "Final Report: Groundwater Assessment Program". Both reports provided hydraulic conductivity data from laboratory testing on soil obtained from borings on site and supplemented the information by generalized descriptions obtained from U.S.G.S. publications.

It was observed in both reports that the loess with variable clay content extends from about 6 to 48 feet below the surface across the site. Immediately below the loess, a thin layer (1 to 2 feet) of greenish-gray sandy clay is usually present. Underlying the sandy clay is a marl from the Vicksburg formation called the Byram marl. The top of the marl varies across the site from 60 to 65 feet mean sea level (msl). This marl serves as the bottom of a shallow confined aquifer. Various cross sections of the geology beneath the South Plant are shown in Figures 2-7. The cross sections portray silt with variable clay content as interpreted by individual loggers; the formation is Pleistocene loess to approximately 60 feet msl.

The bedrock underlying the facility is a layer of Glendon limestone of the Vicksburg Formation and, beneath the limestone, is the Jackson Formation. The top of the Glendon limestone is expected to be 80 to 100 feet beneath the plant site and ranges from 25 to 65 feet thick. The Glendon is a dark gray to brown, dense, fine-grained limestone. The underlying non-permeable Jackson Formation is 40 to 150 feet thick.

Information in the 1965 Bulletin 105 "Mississippi Geological, Economic and Topographical Survey" by William H. Moore describes the Glendon limestone and the Byram marl which is located at the top of the highest hard limestone ledge of the Glendon:

> "The Glendon limestone consists of alternating beds of gray, fossiliferous, glauconitic, slightly sandy limestone and gray-green, glauconitic, fossiliferous, sandy marl. The Glendon weathers to a yellowish or buff color. The limestone beds in the Glendon are not constant with the number, thickness and stratigraphic position varying from place to place. A hard bed about 10 feet from the top of the Glendon is the most consistent and usually the thickest. On the outcrop the marls weather more rapidly and the limestone ledges tend to stand out. The Glendon weathers completely in places leaving a dark-brown residual clay. ... At some localities the residual clay contains white, partly weathered limestone and contains at other localities a white, waxy, clayey material. ... The material is a clay giving an x-ray pattern of major montmorillonite and halloysite in which kaolinite is still a trace constituent.
>
> Thick beds of bentonite are present between ledges of Glendon limestone in Smith County. In Warren and Yazoo Counties thin beds of bentonite are present in the same stratigraphic position. ...
>
> The Byram marl consists of gray-green, glauconitic, fossiliferous, clayey marl and gray-green, glauconitic, fossiliferous, limy clay."

The site is in a valley with process areas cut into the hillside. As a generalization the following is a table of notable elevations:

NOTABLE ELEVATIONS	
Area	Approximate Elevation (feet MSL)
Surface of Inactive Disposal Area (SWMU 2)	135
North Pond Area (SWMU 23)	133
South Plant	120
North Plant	115
Railroad Track, Surface Pond Area, Area Surrounding Inactive Disposal Area	100-110
Stout's and Hennessey's Bayou	85

6.3 REGIONAL GROUNDWATER HYDROLOGY

A shallow confined loess aquifer underlying the VCC plant is on top of the Byram marl formation. Reported wells in the area are upgradient of the plant and are producing water from deeper, more productive aquifers such as the Catahoula and Forrest Hill formation. These deeper aquifers are apparently hydraulically separated from the shallow groundwater aquifer.

The shallow aquifer underlying the VCC plant is, however, hydraulically connected to Stout's Bayou and Hennessey's Bayou. Hatcher Bayou and Stouts Bayou merge southeast of the plant site to form Hennessey's Bayou, which flows to the Mississippi River. Noted as intermittent streams on USGS topographical maps these bayous are limited to fresh water fish and wildlife habitat. They are not drinking water or recreational water sources. The major use of the Mississippi River downstream of its confluence with Hennessey's Bayou is as a marine transportation route. There are no drinking water intakes in these waters within three miles downstream of the facility.

6.4 SHALLOW GROUNDWATER HYDROLOGY BENEATH THE PLANT

The Byram marl in the Vicksburg Formation constitutes the bottom of the uppermost water-bearing zone underlying the facility. The Byram marl is described as representing mixed clastic and carbonate sedimentation in an open shelf or platform environment. The argillaceous, massive and medium dense character of the marl would inhibit any significant movement of water through this unit, and there is no indication of secondary permeability. The uppermost water bearing zone is approximately 40 feet thick consisting almost exclusively of Pleistocene loess (silt). The clayey fill material placed atop the loess is acting as a "cap" inhibiting the vertical migration of the groundwater. The presence of the marl on the bottom of the aquifer creates a slightly artesian confined aquifer which is not hydraulically connected to

any potential water-bearing zones at greater depths. The artesian property is characteristic of an aquifer which is under pressure from above and below. The background water quality of this aquifer is marginally acceptable for drinking water; however, due to its low lateral flow and yield characteristics its usefulness as a domestic water supply is severely limited.

6.5 SWMU 2 GEOLOGIC AND HYDROGEOLOGIC FEATURES

The following geologic cross sections, which describe SWMU 2, have been adopted from figures presented in the "Amended and Supplemental Groundwater Assessment Work Plan, December 1999":

- Figure 2 – Potentiometric Contours with Cross Section Locations
- Figure 3 – Section A-A'; generally north/south at the railroad track elevation from the north plant to the south plant.
- Figure 4 – Section B-B'; generally east/west at the southern boundary of the south plant.
- Figure 5 – Section C-C'; generally east/west through the center of the south plant.
- Figure 6 – Section D-D'; generally east/west on the northern boundary of the south plant.
- Figure 7 – Section F-F'; generally north/south on the eastern boundary in the south plant.

The various cross sections depict the wind-borne deposited silty sediments, or Pleistocene loess, underlying the Vicksburg Chemical site. The Pleistocene loess is a homogeneous, massive silt with variable clay content. SWMU 2, historically called the "hill area", is entirely a loess deposit. There is less clay content in the SWMU 2 than is present in the loess underlying most of the plant.

Groundwater potentiometric contours in the SWMU 2 areas are depicted on Figure 2. The temporary piezometers were not surveyed; however, LS2, LS3, LS4, and LS5 were installed

in the generally flat top elevation of SWMU which is 135 feet msl. LS1 was installed down slope about 5 feet at 130 feet msl. The groundwater levels in SWMU 2 are consistent with the levels projected from previous work in surrounding monitor wells (MW-2, MW-7, MW-5, MW-3, MW-11, MW-14, MW-12, MW-8, MW-10, MW-16). There does not appear to be any trapped water perched within the hill or mounding effects due to historic use of the pits, ponds, and landfill, which were drained and closed in 1979. There is contamination of the soil down to the top of the groundwater aquifer. The groundwater itself is, therefore, contaminated as a result of those previous activities. The results of sampling are tabulated in Section 7.0.

The shallow aquifer underlying the VCC plant site, including SWMU-2, is hydraulically connected to Stouts Bayou and Hennessey's Bayou. Hatcher Bayou and Stouts Bayou merge southeast of the plant site to form Hennessey's Bayou, which flows to the Mississippi River. Monitor wells MW-5, MW-6, and MW-7 intercept the shallow aquifer between SWMU 2 and Hennessey's Bayou.

The results are presented in the following tables in this section:

- Table 7-1 – Volatiles in Soil
- Table 7-2 – Volatiles in Groundwater
- Table 7-3 – Semi Volatiles in Soil
- Table 7-4 – Semi Volatiles in Groundwater
- Table 7-5 – Pesticide/PCB in Soil
- Table 7-6 – Pesticide/PCB in Groundwater
- Table 7-7 – Atrazine, Cyanazine, and Dinoseb in Soil
- Table 7-8 – Atrazine, Cyanazine, and Dinoseb in Groundwater
- Table 7-9 – Metals in Soil
- Table 7-10 – Metals in Groundwater

The results are compared in each of the tables to the "unrestricted" values presented in the MDEQ Tier 1 Target Remediation Goal (TRG) Table. The specific "unrestricted" TRG concentrations have been determined to be protective of human health and the environment for unrestricted use of the site.

TABLE 7-1 – VOLATILES IN SOIL

Volatile Organics Component Name	Sample Results ug/Kg (ppb)															Component MDL ug/Kg (ppb)	MDEQ Tier 1 TRG Table (ppb)
	LS1-A	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-B	LS5-C		
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	49,100
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	2,970
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	33
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	220,000
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	14,300
Acetone	ND	142	101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,928	50	7,820,000
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.9	ND	5	7,970
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	77.2
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	116,000
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	782,000
Chloroform	ND	ND	ND	111	74.7	40.4	ND	ND	ND	ND	ND	16.2	ND	96.9	33	5	312
2-Butanone	ND	186	206	18.2	602	ND	ND	ND	ND	281	ND	839	ND	92.1	78	50	129,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	229	5	406
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	1,190,000
Carbon Tetrachloride	ND	ND	ND	112	41.9	37.6	ND	ND	ND	ND	6,659	62.4	ND	138	ND	5	371
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	10,300
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	445
c-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	134
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	7,600
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	887
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	7,600
t-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	134
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	1,090
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	58,800
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50	6,260,000
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	11,900
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	656
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50	3,130,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.8	15	5	38,000
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	1,190
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6,207	39.1	ND	253	645	5	395,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	49.9	68,895	585	ND	ND	ND	5	384,000
Xylenes (total)	ND	ND	ND	14.3	36.3	31.9	ND	ND	ND	ND	53,106	383	ND	1,945	1,969	5	318,000

TABLE 7-2 – VOLATILES IN GROUNDWATER							
Volatile Organics Component Name	Sample Results µg/L (ppb)					Component MDL µg/L (ppb)	MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-W	LS2-W	LS3-W	LS4-W	LS5-W		
Chloromethane	ND	ND	ND	ND	ND	1	1.49
Bromomethane	ND	ND	ND	ND	ND	1	8.52
Vinyl Chloride	ND	ND	ND	ND	ND	1	2.0
Chloroethane	ND	ND	ND	ND	ND	1	3.64
Methylene Chloride	ND	ND	ND	ND	ND	1	5.0
Acetone	ND	ND	ND	ND	ND	5	3,650
Carbon Disulfide	ND	ND	ND	ND	ND	1	1,040
1,1-Dichloroethene	ND	ND	ND	ND	ND	1	7.0
1,1-Dichloroethane	ND	ND	ND	ND	ND	1	798
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	1	70
Chloroform	ND	221	ND	17.3	105	1	0.152
2-Butanone	ND	69.1	ND	126	63.4	5	1,910
1,2-Dichloroethane	ND	ND	ND	ND	ND	1	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	1	200
Carbon Tetrachloride	ND	71.4	ND	126	ND	1	5.00
Bromodichloromethane	ND	ND	ND	ND	ND	1	1.08
1,2-Dichloropropane	ND	ND	ND	ND	ND	1	5.0
c-1,3-Dichloropropene	ND	ND	ND	ND	ND	1	0.0765
Trichloroethene	ND	ND	ND	ND	ND	1	5.0
Benzene	ND	ND	ND	ND	ND	1	5.0
Dibromochloroemethane	ND	ND	ND	ND	ND	1	5.0
t-1,3-Dichloropropene	ND	ND	ND	ND	ND	1	0.0765
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	1	5.0
Bromoform	ND	ND	ND	ND	ND	1	2.33
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	5	2,920
Tetrachloroethene	ND	ND	ND	ND	ND	1	5.0
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	1	0.0527
2-Hexanone	ND	ND	ND	ND	ND	5	1,460
Toluene	ND	ND	ND	ND	ND	1	1,000
Chlorobenzene	ND	ND	ND	ND	ND	1	100
Ethylbenzene	ND	ND	ND	ND	12.3	1	700
Styrene	ND	ND	ND	ND	ND	1	100
Xylenes (total)	ND	19.5	ND	ND	40.0	1	10,000

TABLE 7-3 – SEMI-VOLATILES IN SOIL

Semi-Volatile Organics Component Name	Sample Results ug/Kg (ppb)															Component MDL ug/L (ppb)	MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-A	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-B	LS5-C		
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,416.44	ND	ND	ND	ND	330	7,820,000
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	46,900,000
bis(2-Chloroethyl) ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	273
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	391,000
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	3,910,000
2,2'-oxybis(1-Chloropropane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	--
Acetaphenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	2,630
4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	391,000
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	91.2
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	45,600
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	8,410
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	672,000
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	626,000
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	1,560,000
bis(2-Chloroethoxy) methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	--
2,4-Dichloropehnol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	235,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	645,000
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	313,000
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	88.2
Caprolactam	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	39,100
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	--
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	3,130,000
Hexachlorocylopentadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	951
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	58,100
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	830	7,820,000
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	3,910,000
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	6,260,000
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	830	--
Dimethylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	782,000,000
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	4,690,000
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	78,200
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	830	--
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	4,690,000
2,4-Dinitrophenol	ND	ND	2,979.5	ND	1,473.16	ND	ND	ND	ND	ND	4,437.21	ND	ND	1,134.22	ND	830	156,000
4-Nitrophenol	ND	ND	ND	ND	3,250.6	ND	ND	ND	ND	ND	737.44	ND	ND	ND	ND	830	626,000
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	313,000
2,4-Dinitrotoluene	ND	436.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	156,000
Diethylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	401.74	330	1,970,000
4-Chlorophenol-phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	--
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	3,130,000
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	830	--
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,435.03	ND	830	7,820
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	130,000
4-Bromophenyl-phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	--

TABLE 7-3 – SEMI-VOLATILES IN SOIL

Semi-Volatile Organics Component Name	Sample Results ug/Kg (ppb)															Component MDL ug/L (ppb)	MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-A	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-B	LS5-C		
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	399
Atrazine	3,514.57	ND	ND	ND	ND	683.46	ND	ND	ND	ND	ND	ND	ND	3,410.99	ND	330	2,880
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	830	2,660
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	2,350,000
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	23,500,000
Carbazole	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	31,900
Di-n-butylphthalate	1,526.79	2,214.43	2,877.51	ND	ND	ND	6,602.33	8,287.03	5,951.93	ND	ND	ND	ND	ND	1,520.53	330	2,280,000
Flouranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	3,130,000
Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	2,350,000
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	928,000
3,3-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	1,420
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	875
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	87,500
Bis-(2-Ethylhexyl)phthalate	204.6	342.08	409.97	ND	ND	ND	792.82	1,228.53	1,111.61	ND	ND	ND	ND	ND	511.37	330	45,600
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	1,560,000
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	875
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	8,750
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	87.5
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	875
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	87.5
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	2,350,000

TABLE 7-4 – SEMI-VOLATILES IN GROUNDWATER							
Semi Volatile Organics Component Name	Sample Results µg/L (ppb)						MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-W	LS2-W	LS3-W	LS4-W	LS5-W	Component MDL µg/L (ppb)	
Benzaldehyde	ND	ND	ND	7.72	5.08	5	3,650
Phenol	ND	ND	ND	ND	ND	5	21,900
bis(2-Chloroethyl) ether	ND	ND	ND	ND	ND	5	0.0609
2-Chlorophenol	ND	ND	ND	ND	ND	5	183
2-Methylphenol	ND	ND	ND	ND	ND	5	1,830
2,2'-oxybis(1-Chloropropane)	ND	ND	ND	ND	ND	5	--
Acetaphenone	ND	ND	ND	ND	18.92	5	0.0416
4-Methylphenol	ND	ND	ND	ND	ND	5	183
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	5	0.0957
Hexachloroethane	ND	ND	ND	ND	ND	5	0.754
Nitrobenzene	ND	ND	ND	ND	ND	5	3.53
Isophorone	ND	ND	ND	ND	ND	5	70.5
2-Nitrophenol	ND	ND	ND	ND	ND	5	292
2,4-Dimethylphenol	ND	ND	ND	ND	ND	5	730
bis(2-Chloroethoxy) methane	ND	ND	ND	ND	ND	5	--
2,4-Dichloropehnol	ND	ND	ND	ND	ND	5	110
Naphthalene	ND	ND	ND	ND	ND	5	1,460
4-Chloroaniline	ND	ND	ND	ND	ND	5	146
Hexachlorobutadiene	ND	ND	ND	ND	ND	5	0.135
Caprolactam	15.51	ND	12,202.74	38.96	11,475.73	5	18,300
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND	5	--
2-Methylnaphthalene	ND	ND	ND	ND	ND	5	1,460
Hexachlorocylopentadiene	ND	ND	ND	ND	ND	5	50
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	5	6.09
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	25	3,650
1,1'-Biphenyl	ND	ND	ND	ND	ND	5	304
2-Chloronaphthalene	ND	ND	ND	ND	ND	5	487
2-Nitroaniline	ND	ND	ND	ND	ND	25	--
Dimethylphthalate	ND	ND	ND	28.99	ND	5	365,000
Acenaphthylene	ND	ND	ND	ND	ND	5	2,190
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	5	36.5
3-Nitroaniline	ND	ND	ND	ND	ND	25	--
Acenaphthene	ND	ND	ND	ND	ND	5	2,190
2,4-Dinitrophenol	ND	ND	ND	ND	ND	25	73
4-Nitrophenol	ND	547.61	ND	ND	2,358.87	25	292
Dibenzofuran	ND	ND	ND	ND	ND	5	24.3
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	5	73
Diethylphthalate	11.29	11.36	21.73	15.9	8.2	5	29,200
4-Chlorophenol-phenyl ether	ND	ND	ND	ND	ND	5	--
Fluorene	ND	ND	ND	ND	ND	5	1,460
4-Nitroaniline	ND	ND	ND	ND	ND	25	--
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	ND	25	3.65
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	5	13.7

TABLE 7-4 – SEMI-VOLATILES IN GROUNDWATER							
Semi Volatile Organics Component Name	Sample Results µg/L (ppb)						MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-W	LS2-W	LS3-W	LS4-W	LS5-W	Component MDL µg/L (ppb)	
4-Bromophenyl-phenyl ether	ND	ND	ND	ND	ND	5	--
Hexachlorobenzene	ND	ND	ND	ND	ND	5	1.0
Atrazine	ND	478.55	ND	ND	6.33	5	3.0
Pentachlorophenol	ND	ND	ND	ND	ND	25	1.0
Phenanthrene	ND	ND	ND	ND	ND	5	1,100
Anthracene	ND	ND	ND	ND	ND	5	11,000
Carbazole	ND	ND	ND	ND	ND	5	3.35
Di-n-butylphthalate	43.62	160.65	132.92	54.13	149.77	5	3,650
Flouranthene	ND	ND	ND	ND	ND	5	1,460
Pyrene	ND	ND	ND	ND	ND	5	1,100
Butylbenzylphthalate	ND	ND	ND	ND	ND	5	2,690
3,3-Dichlorobenzidine	ND	ND	ND	ND	ND	5	0.149
Benzo(a)anthracene	ND	ND	ND	ND	ND	5	0.0917
Chrysene	ND	ND	ND	ND	ND	5	9.17
Bis-(2-Ethylhexyl)phthalate	213.44	34.93	474.04	42.03	130.9	5	6.0
Di-n-octylphthalate	ND	ND	ND	ND	ND	5	20
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	5	0.0917
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	5	0.917
Benzo(a)pyrene	ND	ND	ND	ND	ND	5	0.2
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	5	0.0917
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	5	0.00917
Benzo(g,h,I)perylene	ND	ND	ND	ND	ND	5	1,100

TABLE 7-5 – PESTICIDE/PCB IN SOIL

Organic Compound	Sample Results															MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-A	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-B	LS5-C	
alpha – BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	101
beta – BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	355
delta – BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
gamma – BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	491
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	127
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37.6
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	70.2
4,4' – DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,880
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	39.9
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23,500
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	469,000
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	469,000
4-4' – DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,660
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Endrin Ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	391,000
4,4' – DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,880
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
alpha – Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,820
gamma – Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,820
Toxaphene	270	ND	ND	1510	ND	ND	ND	ND	ND	ND	ND	ND	ND	19,210	ND	581
PCB – 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,480
PCB – 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
PCB – 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
PCB – 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
PCB – 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
PCB – 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
PCB - 1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000

TABLE 7-6 – PESTICIDE/PCB IN GROUNDWATER						
Organic Component	Sample Results (ppb)					MDEQ Tier 1 TRG Table µg/L (ppb)
	LS1-W	LS2-W	LS3-W	LS4-W	LS5-W	
alpha – BHC	ND	ND	ND	ND	ND	0.0106
beta – BHC	ND	ND	ND	ND	ND	0.0372
delta – BHC	ND	ND	ND	ND	ND	--
gamma – BHC (Lindane)	ND	ND	ND	ND	ND	0.02
Heptachlor	ND	ND	ND	ND	ND	0.4
Aldrin	ND	ND	ND	ND	ND	0.00394
Heptachlor epoxide	ND	ND	ND	ND	ND	0.2
4,4' – DDE	ND	ND	ND	ND	ND	0.197
Dieldrin	ND	ND	ND	ND	ND	0.00419
Endrin	ND	ND	ND	ND	ND	2.0 MCL
Endosulfan I	ND	ND	ND	ND	ND	219
Endosulfan II	ND	ND	ND	ND	ND	219
4-4' – DDD	ND	ND	ND	ND	ND	0.279
Endrin Aldehyde	ND	ND	ND	ND	ND	--
Endrin Ketone	ND	ND	ND	ND	ND	--
Methoxychlor	ND	ND	ND	ND	ND	40.0
4,4' – DDT	ND	ND	ND	ND	ND	0.197
Endosulfan Sulfate	ND	ND	ND	ND	ND	--
alpha – Chlordane	ND	ND	ND	ND	ND	2.0
gamma – Chlordane	ND	ND	ND	ND	ND	2.0
Toxaphene	ND	ND	ND	ND	ND	3.0 MCL
PCB – 1016	ND	ND	ND	ND	ND	0.957
PCB – 1221	ND	ND	ND	ND	ND	0.0335
PCB – 1232	ND	ND	ND	ND	ND	0.0335
PCB – 1242	ND	ND	ND	ND	ND	0.0335
PCB – 1248	ND	ND	ND	ND	ND	0.0335
PCB – 1254	ND	ND	ND	ND	ND	0.0335
PCB - 1260	ND	ND	ND	ND	ND	0.0335

TABLE 7-7 – ATRAZINE, CYANAZINE AND DINOSEB IN SOIL (ppb)

Organics Component	Sample Results (ppb)															MDEQ Tier 1 TRG Table (ppb)
	LS1-A	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-B	LS5-C	
Atrazine	3,514	ND	ND	ND	ND	683	ND	ND	ND	ND	ND	ND	ND	3,410	ND	2,880
Cyanazine	ND	ND	ND	ND	ND	4,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	760
Dinoseb	ND	41,300	30,700	ND	ND	ND	ND	ND	ND	24,600	279,000	ND	ND	8,282,596	3,229	78,200

TABLE 7-8 – ATRAZINE, CYANAZINE AND DINOSEB IN GROUNDWATER (ppb)						
Organic Component	Sample Results (ppb)					MDEQ Tier 1 TRG Table (ppb)
	LS1-W	LS2-W	LS3-W	LS4-W	LS5-W	
Atrazine	ND	478	ND	ND	6.33	3.0 MCL
Cyanazine	ND	ND	ND	ND	ND	0.0797
Dinoseb	ND	8,714	ND	597	797	7.0 MCL

TABLE 7-9 – METALS IN SOIL

Target Analyte	Sample Results mg/Kg (ppm)																	Component MDL mg/Kg (ppm)	MDEQ Tier 1 TRG Values, mg/Kg (ppm)
	LS1-A	LS1-A (dup)	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-A (dup)	LS5-B	LS5-C		
Aluminum	7,477	7,340	2,189	7,641	6,784	1,822	5,372	6,971	5,653	4,680	5,804	5,285	4,139	5,629	5,785	7,047	10,218	10	78,200
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3	31.3
Arsenic	2.5	2.9	1.95	1.8	2.0	ND	1.4	1.4	4.46	1.9	2.7	1.9	2.2	1.3	1.20	2.2	2.1	0.5	0.426
Barium	111	113	127	118	128	132	65	94	146	59	107	155	42	61.7	64.0	216	140	10	5,480
Berylium	0.34	0.33	ND	0.26	0.34	ND	ND	0.33	0.28	ND	0.27	ND	ND	0.25	0.24	0.34	0.45	0.25	156
Cadmium	0.45	0.44	ND	0.3	0.40	ND	0.27	0.38	0.49	0.28	0.37	0.44	0.27	0.26	0.28	0.27	0.41	0.25	78.2
Calcium	23,985	24,616	6,630	21,489	16,570	3,811	32,506	22,206	33,524	34,947	41,064	1,902	56,567	49,077	54,225	4,543	1,937	0.1	--
Chromium	8.6	8.7	2.8	8.3	9.0	3.1	6.9	8.5	6.4	6.9	7.9	12.1	6.5	7.9	8.1	22.6	9.6	0.5	227
Cobalt	5.3	6.4	ND	4.4	6.0	ND	3.8	5.6	5.0	3.8	5.0	4.2	3.5	4.2	4.2	5.9	5.3	2.5	4,690
Copper	12.0	12.0	5.5	9.9	11.6	3.3	8.2	11.3	12.2	8.9	10.3	15.6	8.3	10.0	9.75	14.2	15.5	1.25	3,130
Iron	15,279	15,958	8,703	11,188	14,095	13,321	10,783	14,206	14,890	11,342	13,272	1,189	10,520	11,039	11,604	13,980	22,409	5	23,500
Lead	6.8	6.4	7.5	4.6	6.2	10.0	4.0	5.2	5.2	4.0	4.7	5.9	3.7	3.4	4.1	8.9	6.7	0.15	400
Magnesium	10,147	11,941	1,128	2,672	8,410	782	18,981	11,582	16,841	16,541	17,701	1,932	26,098	21,012	23,626	2,154	2,546	0.75	--
Manganese	392	578	56	247	527	62	205	409	760	163.7	508	226	145	353	349	459	763	0.75	3,600
Mercury	0.046	0.056	ND	ND	0.060	ND	ND	ND	0.045	ND	ND	0.041	0.044	ND	ND	ND	ND	0.04	10
Nickel	13.4	14.0	ND	10.5	13.4	ND	9.7	12.3	14.0	9.6	11.0	10.6	8.6	9.7	9.55	14.5	15.4	2	1,560
Potassium	1,028	1,085	1,027	1,027	1,215	2,460	1,005	1,035	1,141	1,007	2,083	669	968	1,057	1,147	863	1,020	5	--
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.25	391
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	391
Sodium	206	185	194	203	167	426	221	288	579	166	360	4,880	134	104	87.6	1,266	72.8	0.75	--
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	5.48
Vanadium	16.0	16.6	13.0	13.3	16.1	19.2	11.5	16.3	15.8	10.7	14.1	15	9.9	12.7	13.1	16.6	21.0	2.5	548
Zinc	40.1	40.5	10.4	30.8	40.0	6.4	26.8	36	38.4	28.1	32.9	42.5	25.4	26.6	26.9	41.8	46.7	1	23,500
Cyanide	ND		ND			ND	ND	ND	ND	ND	ND	1.05	ND	ND		ND	ND	0.2	1,560

TABLE 7-10 – METALS IN GROUNDWATER								
	Sample Results µg/L (ppb)							
Target Analyte	LS1-W	LS2-W	LS3-W	LS4-W	LS4-W (dup)	LS5-W	Component MDL mg/L (ppm)	MDEQ Tier 1 TRG Table µg/L (ppb)
Aluminum	5.5	2.7	2.1	1.1	1.2	2.2	0.2	36,500
Antimony	ND	ND	ND	ND	ND	ND	0.06	6 MCL
Arsenic	ND	ND	ND	ND	ND	ND	0.01	50 MCL
Barium	0.4	0.122	0.166	0.215	0.213	ND	0.2	2,000 MCL
Berylium	ND	ND	ND	ND	ND	ND	0.005	4 MCL
Cadmium	ND	ND	ND	ND	ND	0.012	0.005	5 MCL
Calcium	562	232	61.1	175.3	182	953	5	--
Chromium	ND	0.014	ND	ND	ND	ND	0.01	100
Cobalt	ND	0.058	ND	ND	ND	0.058	0.05	2,190
Copper	ND	0.052	ND	ND	ND	ND	0.025	1,300 MCL
Iron	11.3	8	1.59	0.198	0.188	0.499	0.1	11,000
Lead	0.0056	0.0039	ND	ND	ND	ND	0.003	15 MCL
Magnesium	282	100.8	35.4	78.5	81.1	1,861	5	--
Manganese	0.87	6.9	1.478	0.600	0.591	10.45	0.015	1,680
Mercury	ND	ND	ND	ND	ND	ND	0.0002	2 MCL
Nickel	ND	0.138	ND	ND	ND	0.098	0.04	730
Potassium	11.54	37.3	8.9	7.60	7.6	13.0	5	--
Selenium	0.0077	0.021	0.009	0.01	0.006	0.010	0.005	50 MCL
Silver	ND	ND	ND	ND	ND	ND	0.01	183
Sodium	59.9	59.5	17.5	32.0	32.8	901	5	--
Thallium	ND	ND	ND	ND	ND	ND	0.01	2 MCL
Vanadium	ND	ND	ND	ND	ND	ND	0.05	256
Zinc	0.035	0.142	0.023	ND	ND	0.060	0.02	11,000
Cyanide		0.190	0.038	0.116		ND	0.01	200 MCL

As documented in Section 7, evidence of contamination has been found in the "hill area" of SWMU 2 and the groundwater beneath the "hill area".

A conceptual exposure model of SWMU 2 has been developed and is presented as Figure 8. The only complete exposure route for contaminants in SWMU 2 is infiltration/percolation to the groundwater then discharge into the groundwater. The shallow aquifer underlying the VCC plant site, including SWMU-2, is hydraulically connected to Stouts Bayou and Hennessey's Bayou. Hatcher Bayou and Stout's Bayou merge northeast of the plant site to form Hennessey's Bayou, which flows to the Mississippi River.

Monitor wells MW-5, MW-6, and MW-7 intercept the shallow aquifer between SWMU 2 and Hennessey's Bayou. These wells have been sampled since 1991 and analyzed for atrazine, dinoseb, toxaphene, arsenic and volatiles. The following is a summary of hits from analysis of the groundwater in MW-5, MW-6, and MW-7. The MCLs are also listed for the compounds.

TABLE 8-1

MW-5, MW-6, MW-7
SUMMARY OF HITS (CONCENTRATION RANGE IN ppb)
GROUNDWATER SAMPLING AND ANALYSIS

Compound	MW-5	MW-6	MW-7	MDEQ Tier 1 TRG Table µg/L (ppb)
Arsenic	ND – 0.07	ND – 0.015	ND – 0.113	50.0 MCL 5.0 Proposed MCL
Dinitrobutylphenol (Dinoseb)	ND – 12.0	ND – 75.0	ND – 4.5	7.0 MCL
Toxaphene	ND	ND – 25.0	ND – 2.77	3.0 MCL
Trichloroethene	ND – 79.0	ND – 9.03	ND	5.0 MCL
Vinyl Chloride	ND	ND – 4.0	ND	2.0 MCL
Total Xylenes	ND – 10.0	ND – 7.0	ND	10,000 MCL

A similar table can be made for groundwater samples LS1-W, LS2-W, LS3-W, LS4-W and LS5-W. The table lists compounds for which there is a detection of organic contamination in one of the samples. There are no metal constituents that exceed MDEQ Tier 1 TRG Table values (refer to Table 10).

TABLE 8-2

LW1-W, LS2-W, LS3-W, LS4-W, LS5-W
SUMMARY OF HITS (ppb)
GROUNDWATER SAMPLING AND ANALYSIS

Compound	LS1-W	LS2-W	LS3-W	LS4-W	LS5-W	MDEQ Tier 1 TRG Table µg/L (ppb)
Chloroform	ND	221	ND	17.3	105	0.152
2-Butanone	ND	69.1	ND	126	63.4	1,910
Carbon Tetrachloride	ND	71.4	ND	126	ND	5 MCL
Ethylbenzene	ND	ND	ND	ND	12.3	700 MCL
Xylene (total)	ND	19.5	ND	ND	40.0	10,000 MCL
Acetaphenone	ND	ND	ND	ND	18.92	0.0416
Caprolactam	15.51	ND	12,202.74	38.96	11,475.73	18,300
Dimethylphthalate	ND	ND	ND	28.99	ND	365,000
4-Nitrophenol	ND	547.61	ND	ND	2,358.87	292
Diethylphthalate	11.29	11.36	21.73	15.9	8.2	29,200
Di-n-butyl-phthalate	43.62	160.65	132.92	54.13	149.77	3,650
Bis-(2-ethyl)hexylphthalate	213.44	34.93	474.04	42.03	130.9	6.0
Atrazine	ND	478	ND	ND	6.33	3 MCL
Dinoseb	ND	8,714	ND	597	797	7 MCL

Monitor wells MW-5, MW-6 and MW-7 are located approximately 100 feet from Hennessey's Bayou. Aquifer properties have been obtained at various wells, including MW-6, and are reported below:

TABLE 8-3

AQUIFER PROPERTIES-IT CORPORATION STUDY

Monitor Well No.	Porosity (%)	Standard Thickness (ft)	Hydraulic Gradient (ft/ft)	Hydraulic Conductivity (cm/sec)	Velocity (ft/year)	Transmissivity (gal/day) (ft)
1*	46	30	0.04	9.07×10^{-5}	8.03	58
6	45	20.5	0.025	9.26×10^{-5}	5.48	40
11	44	42	0.11	2.59×10^{-4}	67.2	232
12	42	41	0.011	1.3×10^{-4}	3.65	116

NOTE: * MW-1 was replaced by MW-1A in 1986.

It is probable that Hennessey's Bayou will soon be impacted, if it is not already impacted.

A comparable summary table is useful for detection of organic contaminants in the soil samples. There are no metal constituents that exceed MDEQ Tier 1 table values with the exception of arsenic. Arsenic is below background concentrations of arsenic present at the Vicksburg site.

TABLE 8-4 – SUMMARY OF SOIL HITS

Compound	LS1-A	LS1-B	LS1-C	LS2-A	LS2-B	LS2-C	LS3-A	LS3-B	LS3-C	LS4-A	LS4-B	LS4-C	LS5-A	LS5-B	LS5-C	MDEQ Tier 1 TRG Table (ppb)
Acetone	ND	142	101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,928	7,820,000
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19,216	ND	7,970
Chloroform	ND	ND	ND	111	74.7	40.4	ND	ND	ND	ND	ND	16.2	ND	96.9	33	312
2-Butanone	ND	186	206	18.2	602	ND	ND	ND	ND	281	ND	839	ND	92.1	78	129,000
Carbon Tetrachloride	ND	ND	ND	112	41.9	37.6	ND	ND	ND	ND	6,659	62.4	ND	138	5	371
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.8	15	38,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6,207	39.1	ND	253	645	395,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	49.9	68,895	585	ND	ND	ND	384,000
Xylenes	ND	ND	ND	14.3	36.3	31.9	ND	ND	ND	ND	53,106	383	ND	1,945	1,969	318,000
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,416.44	ND	ND	ND	ND	7,820,000
2,4-Dinitrophenol	ND	ND	2,929.5	ND	1,473.16	ND	ND	ND	ND	ND	4,437.21	ND	ND	ND	ND	626,500
4-Nitrophenol	ND	ND	ND	ND	3,250.6	ND	ND	ND	ND	ND	737.44	ND	ND	ND	ND	313,000
2,4-Dinitrotoluene	ND	436.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	156,000
Diethylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,970,000
Di-n-butylphthalate	1,526.70	2,214.43	2,877.51	ND	ND	ND	6,602.33	8,287.01	5,951.93	ND	ND	ND	ND	ND	ND	2,280,000
Bis-(2-Ethylhexyl)phthalate	264.6	342.68	409.97	ND	ND	ND	792.82	1,228.55	1,111.6	ND	ND	ND	ND	ND	ND	45,600
Atrazine	3,514	ND	ND	ND	ND	683	ND	ND	ND	ND	ND	ND	ND	3,410	ND	2,880
Cyanazine	ND	ND	ND	ND	ND	4,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	760
Dinoseb	ND	41,300	34,700	ND	ND	ND	ND	ND	ND	24,600	279,600	ND	ND	8,282,596	3,229	78,200
Toxaphene	ND	ND	ND	1510	ND	ND	ND	ND	ND	ND	ND	ND	ND	19,210	ND	581

Based on Table 8-4 "Summary of Soil Hits", the following constituents exceed MDEQ Tier 1 Table values for unrestricted use:

TABLE 8-5

Compound	Location Detected	Concentration (ppb)	MDEQ Tier 1 TRG Table (ppb)	
			Unrestricted	Restricted
Atrazine	LS5-B	3,410	2,880	25,800
Cyanazine	LS2-C	4,000	760	6,810
Dinoseb	LS4-B	279,600	78,200	204,000
	LS5-B	8,282,596	78,200	204,000
Toxaphene	LS2-A	1,510	581	3,000
	LS5-B	19,210	581	3,000

Based on Table 8-2 "Summary of Groundwater Hits", the following constituents exceed MDEQ Tier 1 Table values:

-

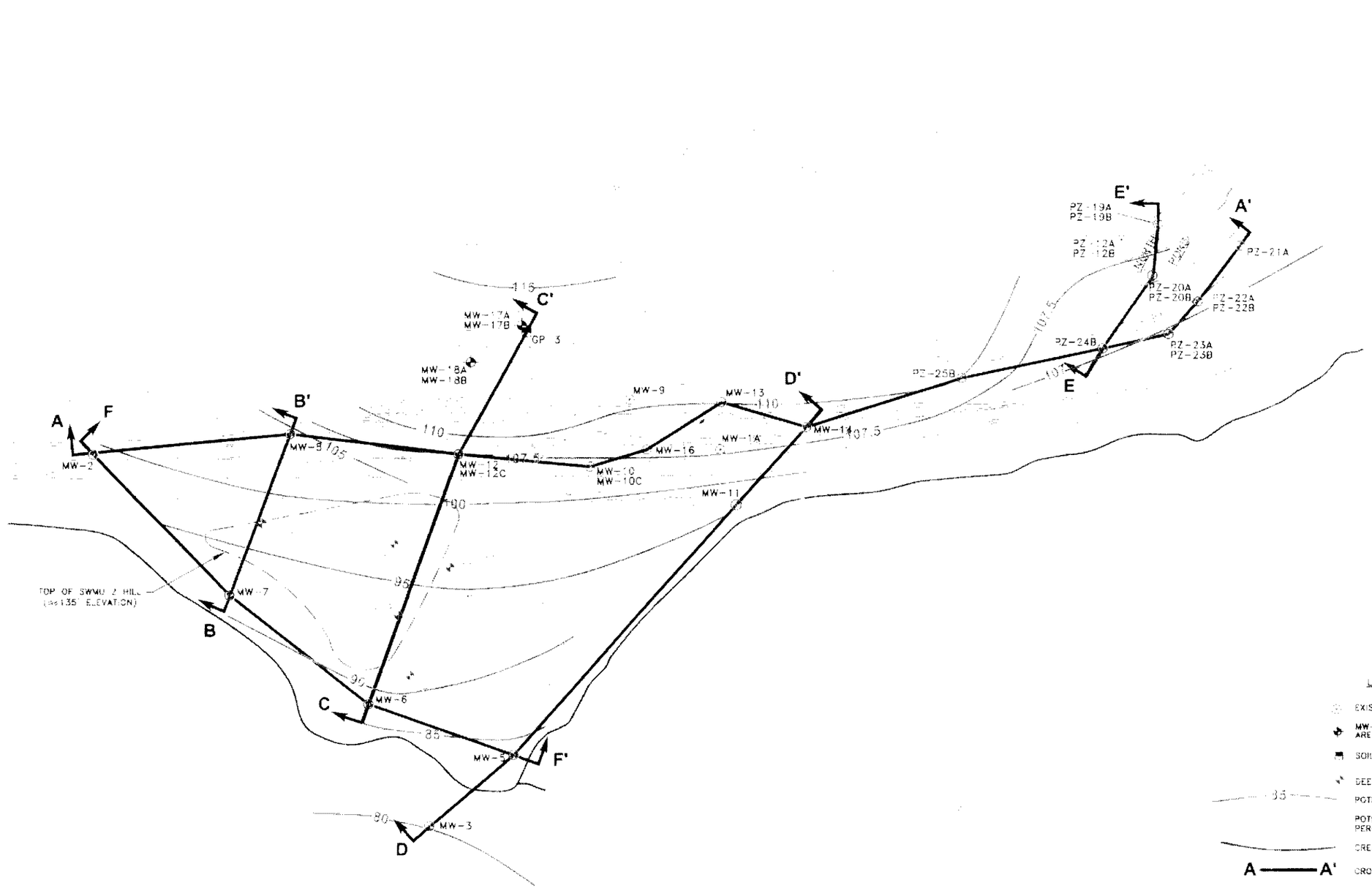
TABLE 8-6

Compound	Location Detected	Concentration (ppb)	MDEQ Tier 1 TRG Table (ppb)
Chloroform	LS2-W	221	0.152
	LS4-W	17.3	0.152
	LS5-W	105	0.152
Carbon Tetrachloride	LS2-W	71.4	5
	LS4-W	126	5
Acetophenone	LS5-W	18.92	0.0416
4-Nitrophenol	LS2-W	547.61	292
	LS5-W	2,358.87	292
Bis-(2-ethyl)hexylphthalate	LS1-W	213.44	6
	LS2-W	34.93	6
	LS3-W	474.04	6
	LS4-W	42.03	6
	LS5-W	130.9	6
Atrazine	LS2-W	478.55	3
	LS5-W	6.33	3
Dinoseb	LS2-W	8,714	7
	LS4-W	597	7
	LS5-W	797	7

The next objective in the RCRA corrective action program is to prevent hazardous constituents from being transplanted beyond VCC boundaries. To the extent that SWMU 2 is

demonstrated in Tables 8-5 and 8-6 to be cause or contributor to that potential problem, the following is a tabulation of measures to study to correct the potential problem:

Corrective Activity	Comment on Activity
Excavate hill and mix with compost to promote bio-degradation.	The hill is approximately 400,000 cubic yards in size. Excavation would not be practical.
Construct a slurry wall around the hill.	The slurry wall itself would be massive and would have to tie into the marl, which is about 40 feet in depth below the elevation of the area surrounding the hill. The length of the slurry wall would be approximately 2,000 feet since it would have to surround the hill.
Construct a recovery trench between the hill and *Hennessey's* Bayou.	The recovery trench would be about 500 feet long and would be lined on the Hennessey's Bayou side. It would be constructed between MW-6 and MW-7. The trench would have to be deeper than Hennessey's Bayou, which is 15 feet deep. The area in which the trench would have to be constructed is subject to flooding.
Infiltration gallery on the hill filled with compost to promote leaching and degradation to hazardous constituent. Recover the groundwater with a recovery trench or recovery wells.	The distribution of extractant (water) may not be reliable and the promotion of subsurface biodegradation unproven. It has not been established that toxaphene can probably be biodegraded in the presence of iron filings. With evidence of soil contamination all the way to the groundwater, compost and iron filings would have to be mixed to a depth of 40 feet.
Construct either vertical or horizontal recovery wells to intercept the groundwater in the shallow aquifer. Discharge the water to the wastewater treatment surface impoundments.	Recovery of less than 1 gallon per minute of groundwater will control the potential discharge of hazardous constituents into Hennessey's Bayou. A logical place to discharge the wastewater is the surface impoundment. The contents of the impoundment are pumped through columns of activated carbon prior to discharge to the Mississippi River. The impoundments are double-lined per RCRA guidelines.



LEGEND:

- EXISTING MONITOR WELL OR PIEZOMETER LOCATION
- MW-17A, MW-17B, MW-18A, MW-10C, MW-12C ARE PROPOSED LOCATIONS
- SOIL BORING LOCATION
- DEEP BORING LOCATIONS
- 85 — POTENTIOMETRIC CONTOUR (UPPERMOST AQUIFER)
- POTENTIOMETRIC CONTOUR PERCHED WATER TABLE IN NORTH POND AREA
- CREEK
- A —— A' CROSS-SECTION LOCATION LINE

REV	DESCRIPTION OF REVISION	BY	DATE
5	ADD SWMU 2 BORINGS	PCG	8/17/00
4			
3			
2			
1			

VICKSBURG CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI

URS
2822 O'Neal Lane
Baton Rouge, Louisiana 70816
225/751-1873

REFERENCE DRAWINGS

SCALE: 1" = 300'
DESIGNED
DRAWN: PCG
CHECKED
PEER REVIEWED
DATE: 8/17/00

SWMU 2 REPORT

POTENTIOMETRIC CONTOURS
WITH CROSS SECTION LOCATIONS

REVISION: 5
PROJECT: 35092B007C
FIGURE: 2

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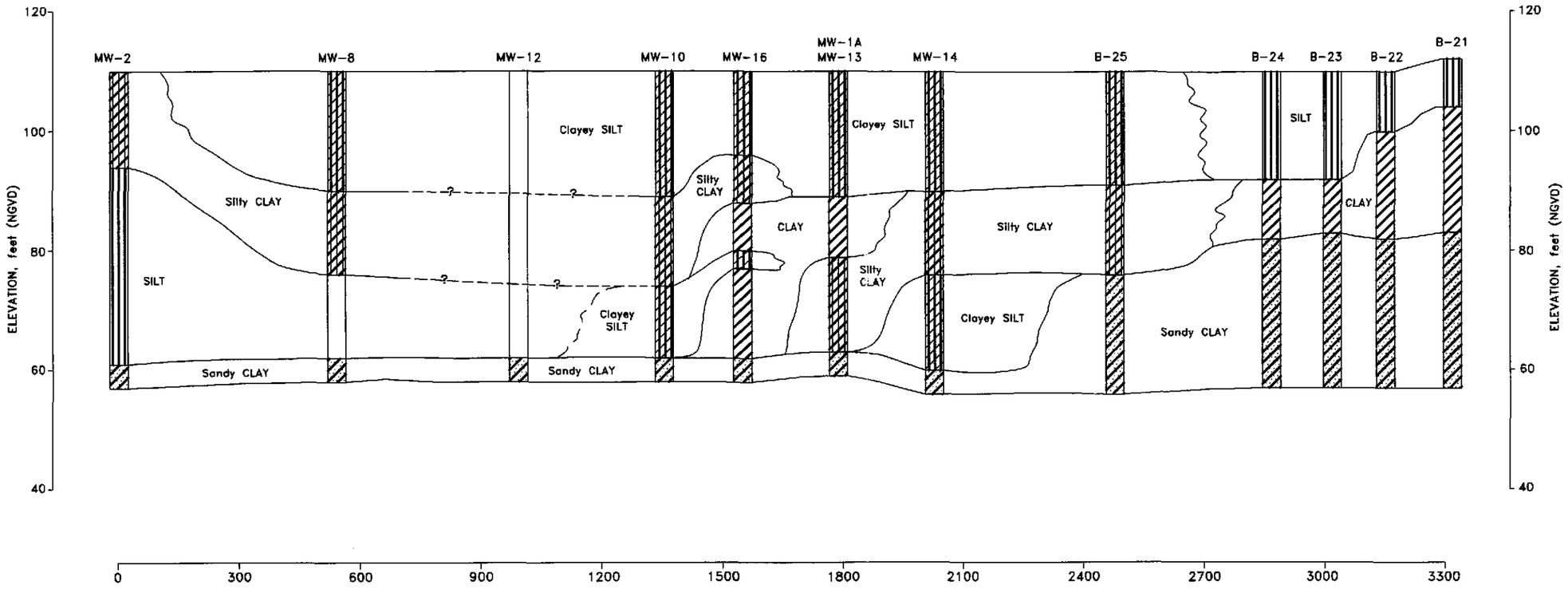
A
WEST

A'
EAST



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REV	DESCRIPTION OF REVISION	BY	DATE
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VICKSBURG CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI

URS
2822 O'Neal Lane
Baton Rouge, Louisiana 70816
225/751-1873

REFERENCE DRAWINGS

SCALE: AS SHOWN
DESIGNED:
DRAWN: PCG
CHECKED: RPL
PEER REVIEWED:
DATE: 8/18/00

SWMU 2 REPORT

CROSS-SECTION A-A'

REVISION: △
PROJECT: 3596B007C
FIGURE: 3

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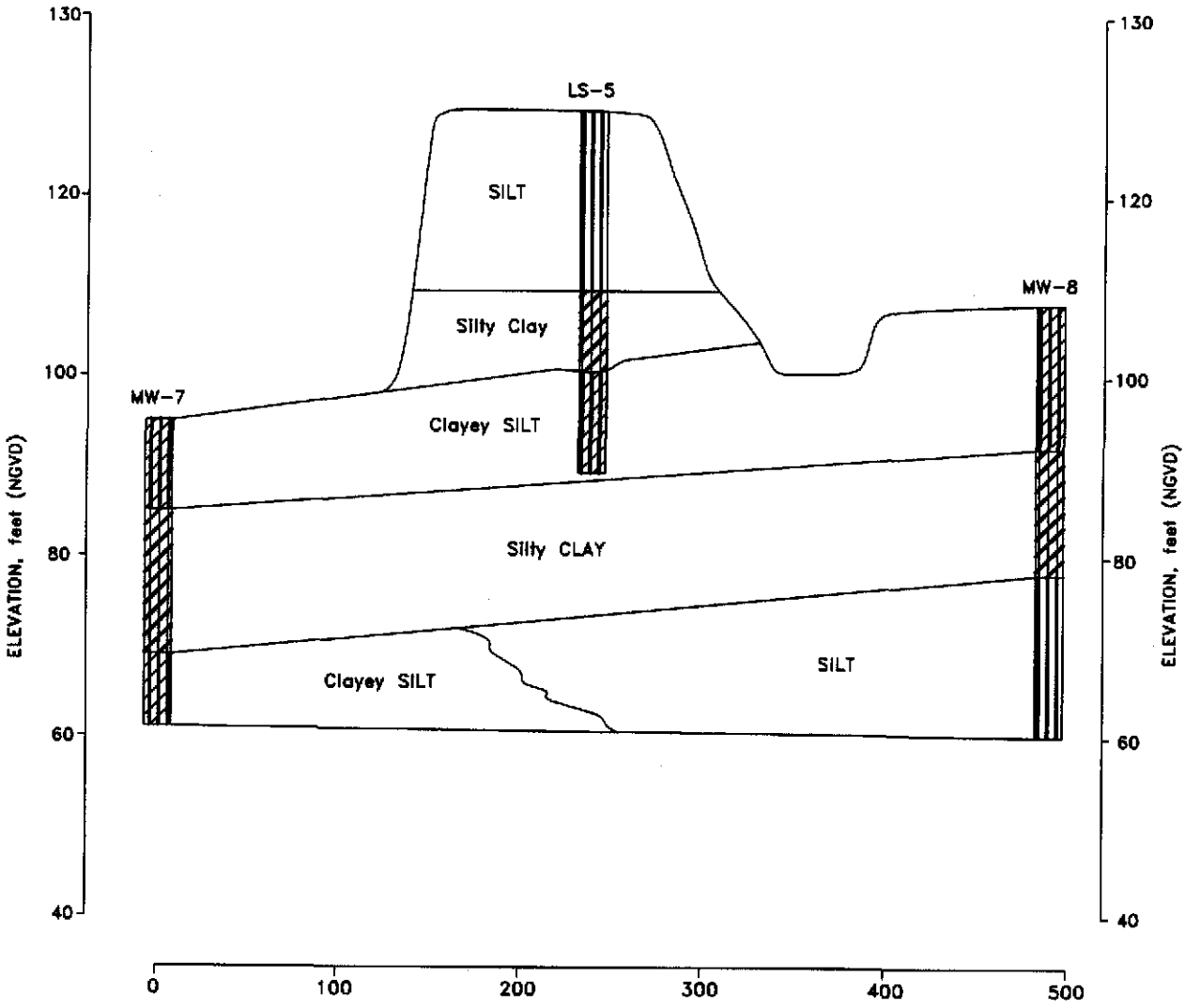

LEGEND

- CLAY
- Silty CLAY
- SILT
- Sandy CLAY
- Clayey SILT

K:\CEDAR\96B007C\96B007CC.DWG

VICKSBURG CHEMICAL CORPORATION VICKSBURG, MISSISSIPPI	URS 2822 O'Neal Lane Baton Rouge, Louisiana 70816 225/751-1873	SWMU 2 REPORT	PROJ. NO. 3096B007C
	SCALE: AS SHOWN; DRAWN BY: PCG; DATE: 8/18/00; CHKD. BY: RDR; DATE:	CROSS-SECTION B-B'	FIGURE 4

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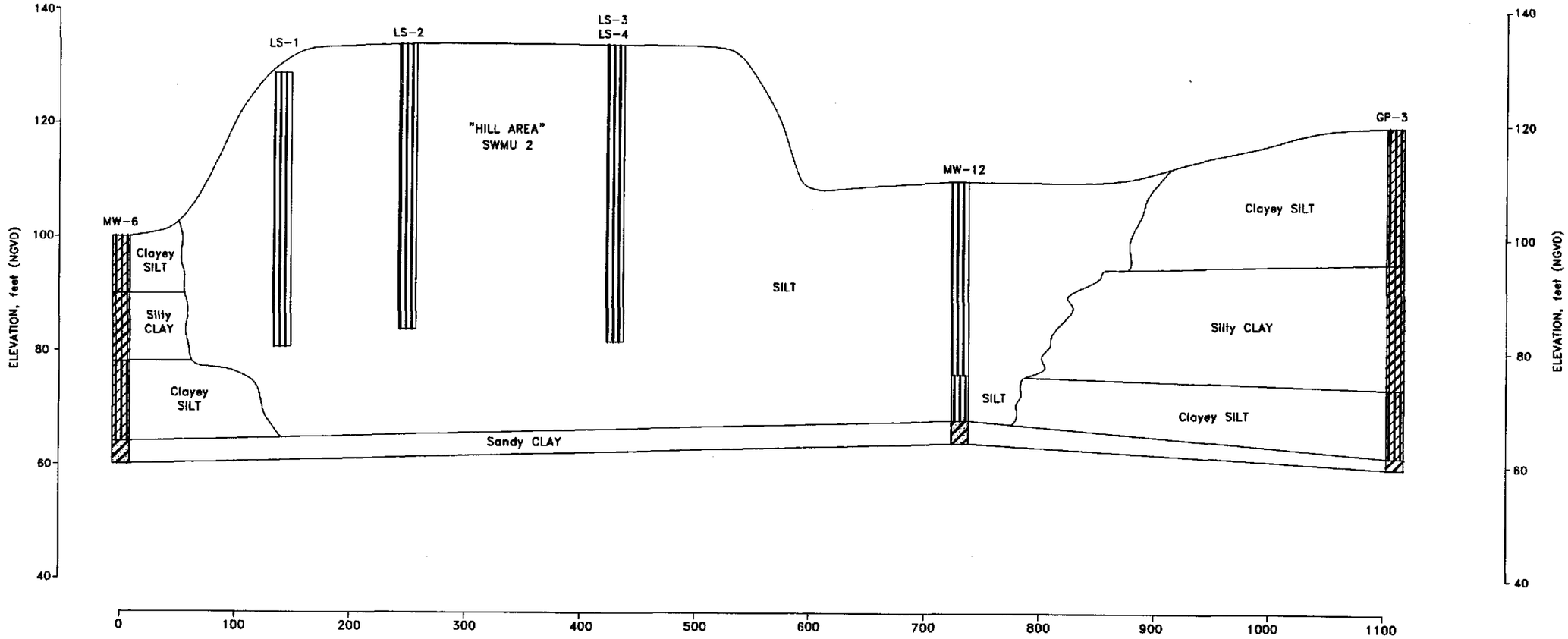
C
SOUTH

C'
NORTH



LEGEND

- CLAY
- Silty CLAY
- SILT
- Sandy CLAY
- Clayey SILT

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REV	DESCRIPTION OF REVISION	BY	DATE
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VICKSBURG CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI

URS
2822 O'Neal Lane
Baton Rouge, Louisiana 70816
225/751-1873

REFERENCE DRAWINGS

SCALE: AS SHOWN
DESIGNED:
DRAWN: PDG
CHECKED: TPDK
PEER REVIEWED:
DATE: 8/18/00

SWMU 2 REPORT

CROSS-SECTION C-C'

REVISION: △
PROJECT: 35096B007C
FIGURE: 5

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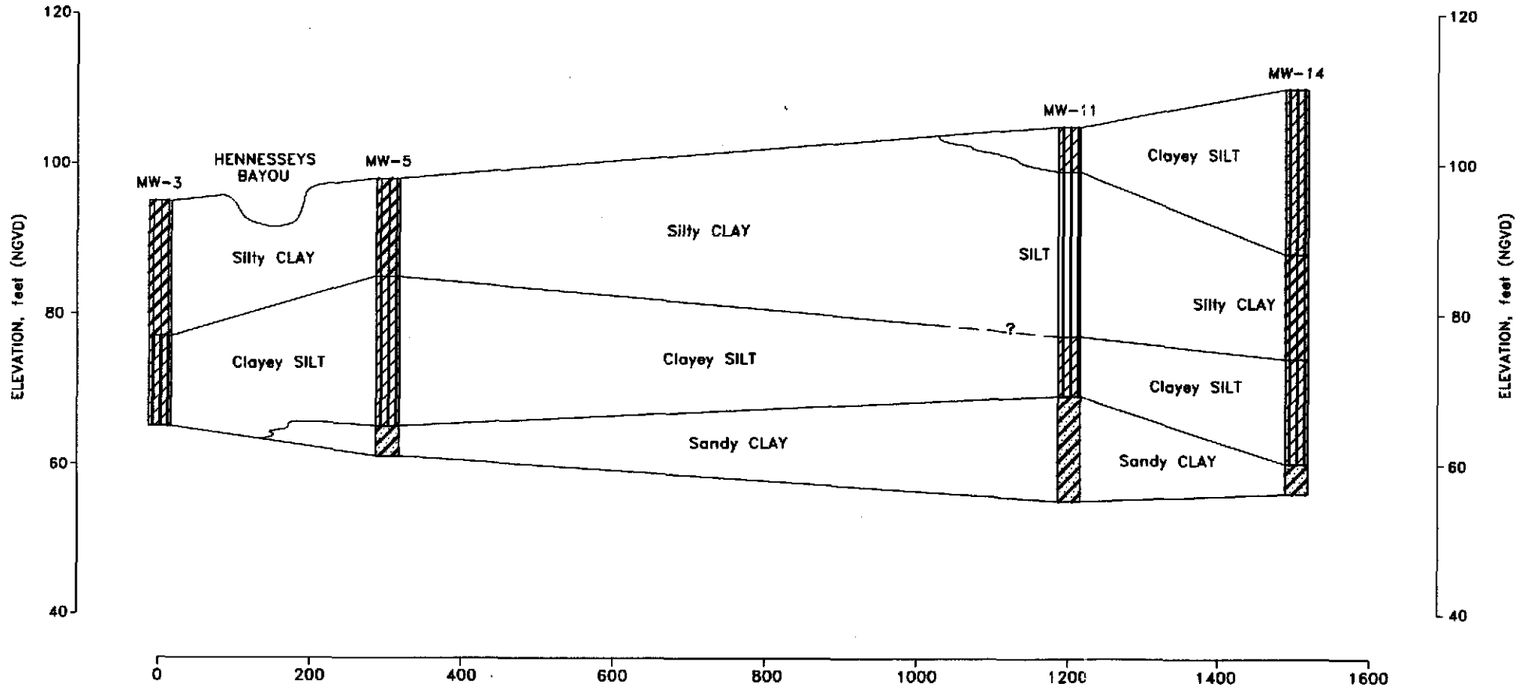
D
SOUTH

D'
NORTH



LEGEND

- CLAY
- Silty CLAY
- SILT
- Sandy CLAY
- Clayey SILT

K:\CEDAR\96B007C\96B007CE.DWG

REV	DESCRIPTION OF REVISION	BY	DATE
△			
△			
△			
△			
△			
△			

VICKSBURG CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI

URS
2822 O'Neal Lane
Baton Rouge, Louisiana 70816
225/751-1873

REFERENCE DRAWINGS

SCALE: AS SHOWN
DESIGNED
DRAWN: PCG
CHECKED
PEER REVIEWED
DATE: 8/18/00

SWMU 2 REPORT

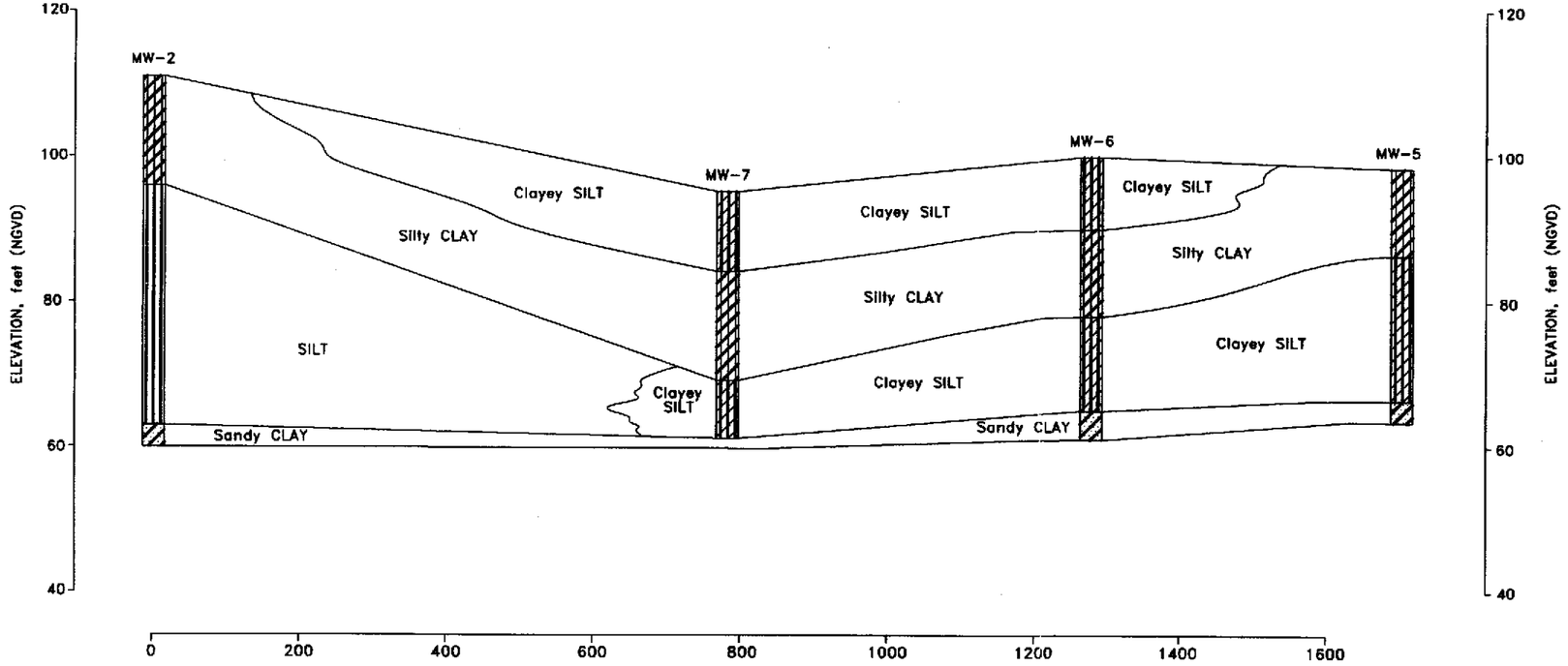
CROSSS-SECTION D-D'

REVISION: △
PROJECT: 35096B007C
FIGURE: 6

K:\CEDAR\92B007C\96B007CE.DWG, 08/18/2000 11:13:50 AM

F
WEST

F'
EAST



LEGEND

- CLAY
- Silty CLAY
- SILT
- Sandy CLAY
- Clayey SILT

K:\CEDAR\96B007C\96B007CF.DWG

REV	DESCRIPTION OF REVISION	BY	DATE
△			
△			
△			
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△			

VICKSBURG CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI

URS
2822 O'Neal Lane
Baton Rouge, Louisiana 70816
225/751-1873

REFERENCE DRAWINGS

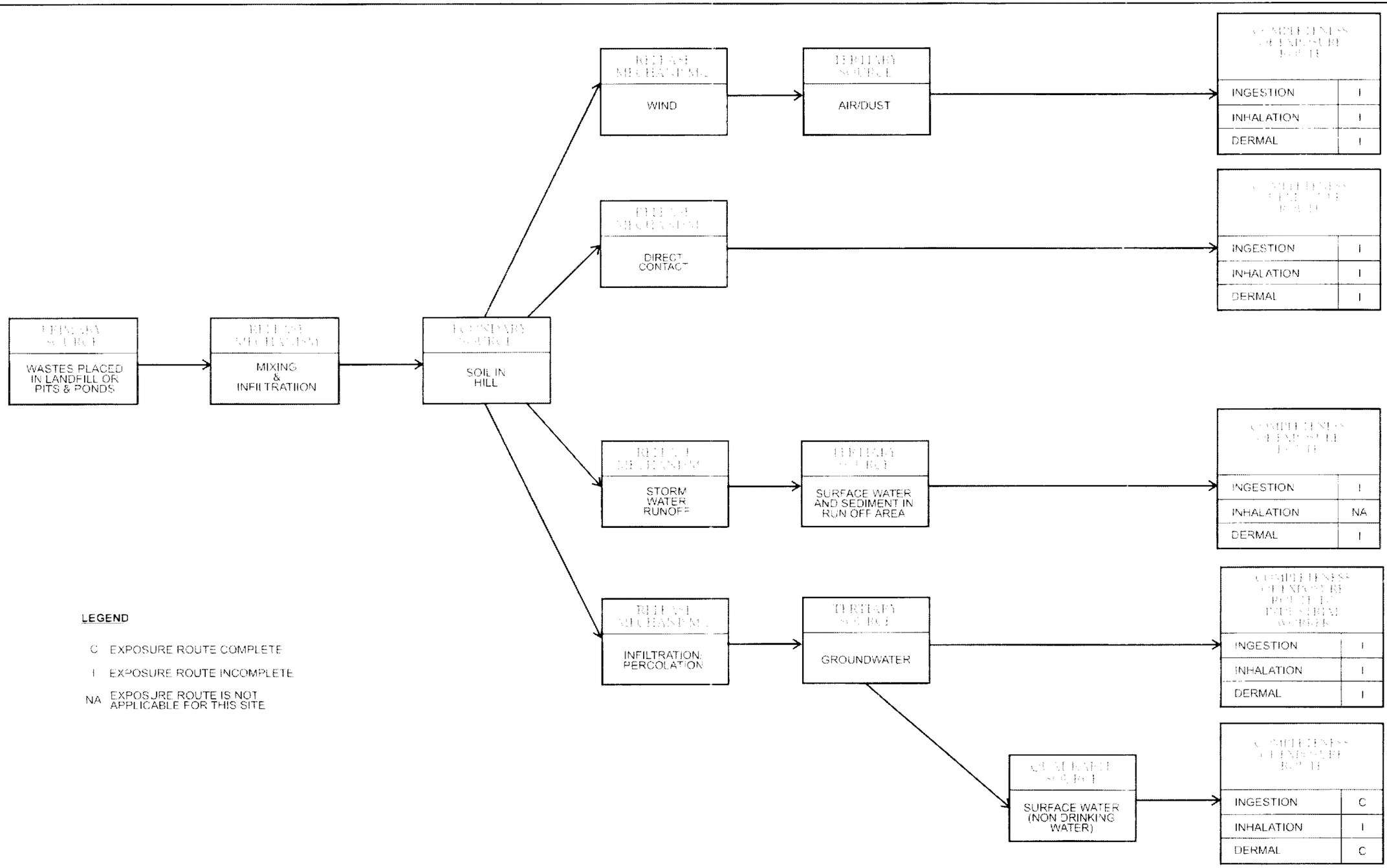
SCALE: AS SHOWN
DESIGNED:
DRAWN: PCG
CHECKED: ROK
PEER REVIEWED:
DATE: 8/18/00

SWMU 2 REPORT

CROSS-SECTION F-F'

REVISION: △
PROJECT: 35096B007C
FIGURE: 7

K:\CEDAR\92B007C\96B007CF.DWG, 08/18/2000 10:43:06 AM



LEGEND

C EXPOSURE ROUTE COMPLETE

I EXPOSURE ROUTE INCOMPLETE

NA EXPOSURE ROUTE IS NOT APPLICABLE FOR THIS SITE

REV	DESCRIPTION OF REVISION	BY	DATE

VICKSBURG CHEMICAL
VICKSBURG, MISSISSIPPI

URS

2622 O'Neal Ln
Baton Rouge, Louisiana 70816
225/761-1872

SCALE: N.T.S.
DRAWN BY: PCG
CHECKED BY:
DEPT:
DATE: 8/25/00

CONCEPTUAL EXPOSURE MODEL

SWMU LANDFILL AREA

REVISION:
PROJECT NO: 35092B007C
FIGURE NO: 8

I:\CHEMWASTE\35092B007C\CEM

PROJECT NUMBER	BORING NUMBER LFS-1
PE00-0717	SHEET 1 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/2/00 FINISH 8/2/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE: Interval	SAMPLE: Type and Number	SAMPLE: Recovery (IN)	Standard Penetration Test PID Results 6"-6"-6" (N)	SOIL DESCRIPTION: Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS: Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	1	LFS-1 A(0-4)	48	0.0	Tan fine silt (wea. Loess), friable, dry	ML	
5	2		48	0.0	Same as above but moist at 4 ft – v. moist at 5.3 ft.		
				9.0			
10	3		48	0.0	Grey fine silt (wea. Loess) grades to tan at 9.5 ft. wet at 9 ft. v. wet at 11.2 ft.	ML	chemical odor at 9 ft. -- becomes less intense with depth
	4		46	0.0	Reddish stained w/ sweet chemical odor		
15				15	Lt. tan - grey fine silt (ML), soft saturated	ML	chemical odor
	5	~~WDL~~ LSF LFS-1 B(14-16)	47	0.0 18	Brown-tan fine silt (wea. Loess), firm, v. moist - grades to Tan at 20 ft. and slightly moist to dry		More intense odor at 18 ft.
20	6	LFS-1 C(23-24)	39	0.0		ML	
25	7		46	25.7 0.0	Yellowish tan fine silt (Loess) soft, saturated grades to tan at 28 ft.	ML	v. slight chemical odor at 25.7
30	8		38	0.0			

PROJECT NUMBER	BORING NUMBER LFS-1
PE00-0717	SHEET 2 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/2/00 FINISH 8/2/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	Standard Penetration Test / PID Results (ppm)	SOIL DESCRIPTION: Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS: Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	8		38	0.0	Tan fine Silt (Wea. Loëss), soft, saturated - no odor		
	9		40	0.0			
35						ML	
	10		30	0.0			
40							
	11		32	0.0	Gray fine silt (unwea. Loëss), soft, saturated, no odor	ML	
45					TD at 44 ft.		
					Well Construction Date Installed: 8/4/00 Constr. Materials: 3/4" ID PVC Backfill: Granular Bentonite Filter Sand: #3 Sand Screen: 3/4" ID PVC 0.010 slot Bottom:	Pipe & Screen	0 - 26 ft. bgs 26 - 43 ft. bgs 43 - 48 ft bgs 48 ft. bgs
					Water Levels Date: 8/4/00 Time: 1500 Depth: 42.45 ft. bgs Time: 1510 Depth: 40.75 ft. bgs		

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil **Site Name:** Vicksburg Chemical Co. Plant

Location: Vicksburg, MS **Boring Number:** LFS-1

Date Sampled: 8/2/00 **Time Sampled:**

Sampling Method: Geoprobe Macro Sampler **Sample Depth:** 0 to 4 feet bgs

Type of Soil: fine silt (ML)

Sample Analysis: VOC Cyanide SVOC Pesticide/PCB Atrazine/Cyanazine/Dinoseb **Sample Container:** VOC = 2oz. Clear Glass; SVOC = 4oz. Amber Glass; Pesticide = 4oz. Amber Glass; Atrazine = 4oz. Amber Glass; Cyanide = 4oz. Clear Glass

Sample Quantity Collected: 18 oz. **Preservative Used:** None

Field Technician: H. Dean Lowe **Signature / Date:** H. Dean Lowe 8/2/00

Remarks:

Sample No. LFS-1 A (0-4 ft. depth)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil **Site Name:** Vicksburg Chemical Co. Plant

Location: Vicksburg, MS **Boring Number:** LFS-1

Date Sampled: 8/2/00 **Time Sampled:**

Sampling Method: Geoprobe macro Sampler **Sample Depth:** 14 to 16 feet bgs

Type of Soil: fine silt (ML)

Sample Analysis: VOC, SVOC, Cyanide, Pesticide/PCB, Atrazine/Cyanazine/Dimes **Sample Container:**

VOC = 2 oz. clear Glass
SVOC = 4 oz. Amber Glass
Pesticide = 4 oz. Amber Glass
Atrazine = 4 oz. Amber Glass
Cyanide = 4 oz. Clear Glass

Sample Quantity Collected: 18 oz. **Preservative Used:** None

Field Technician: H. Dean Lowe **Signature / Date:** H. Dean Lowe 8/2/00

Remarks:

Sample No. LFS-1B (14-16 ft. depth)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil **Site Name:** Vicksburg Chemical Co. Plant

Location: Vicksburg, MS **Boring Number:** LFS-1

Date Sampled: 8/2/00 **Time Sampled:**

Sampling Method: Geoprobe macro sampler **Sample Depth:** 24 to 26 feet bgs

Type of Soil: fine silt (ML)

Sample Analysis: VOC, SVOC, Cyanide; Pesticide/PCB, Atrazine/Cyanazine/Dinoseb

Sample Container: VOC = 2 oz. Clear Glass; SVOC = 4 oz. Amber Glass; Pesticide = 4 oz. Amber Glass; Atrazine = 4 oz. Amber Glass; Cyanide = 4 oz Clear Glass

Sample Quantity Collected: 18 oz **Preservative Used:** None

Field Technician: H. Dean Lowe **Signature / Date:** H. Dean Lowe 8/2/00

Remarks:

Sample No. LFS-1C (24-26 ft. depth)

GROUNDWATER SAMPLING LOG
PETRA ENVIRONMENTAL, INC.
Houston, Texas *Baton Rouge, Louisiana*

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS

Boring Number: LFS-1

Date Sampled: 8/6/00

Time Sampled: VOC = 0645
Metals/Cyanide = 0830
SVOC = 0835
Pest/PCB & Atrazine = 1000

Sampling Method: VOC = SS Bailer
Others = Geoprobe vacuum

Sample Depth: 43-48 feet bgs

:Sample Type: Grab

Sample Number(s): LS1-W

:Sample Quantity Collected: 3.8 liters

Sample Container: VOC = 40 ml glass vial
Cyanide = 500ml liter plastic
Metals = 250ml liter plastic
Others = 1 liter amber glass

Sample Analysis: VOC Pesticide/PCB
SVOC Atrazine/Cyanazine/Dinoseb
Cyanide T. Metals

Preservative: VOC = HCl
Cyanide = NaOH
Metals = HNO_3

Purging: N/A Well installed with Geoprobe

Time: 0610 SWL(ft): 40.7 Well Depth(ft bgs): 48 Well Vol.(gal): N/A

	pH	Cond.	Temp.(degrees)	Vol. Removed.(gal)
1st WV				
2ndWV				
3rdWV				
Ave.				Total

Remarks:

Sampling: Slow well yield = approx. 1 liter per hour

Time: WL(ft):

pH: Cond(mhos): Temp.(degrees C F)

Remarks:

Field Technician: H. Dean Lowe

Signature / Date:
H. Dean Lowe 8/6/00

PROJECT NUMBER	BORING NUMBER LFS-2
PE00-0717	SHEET 1 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/3/00 FINISH 8/3/00 LOGGER H. Dean Loose

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	Standard Penetration Test / PID Results	SOIL DESCRIPTION: Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS: Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	1	LFS-2 A (0-4)	47	0.0	Tan fine silt, dry	ML	Fill
				2.2	Tan fine silt (wea. Loess), firm, dry	ML	
				4.0			
5	2		46	0.0	Lt. gray fine silt, firm, moist	ML	Sweet chemical odor @ 4 ft. Pond muck
				8.2	Becomes yellowish tan wet, soft @ 8.6 ft.		Stronger odor @ 8.2 ft. (no register on PID)
		LFS-2 B		0.0			
10	3	(8-10)	36	0.0 9.8	Rust red stained fine silt, firm, dry	ML	Sweet chemical odor
				10.2	Lt. Gray fine silt, firm to soft, moist to wet		
				0.0		ML	Sweet chemical odor
	4		43	0.0			
				M.L			
15				0.0	Reddish tan fine silt, moist, firm-soft, iron stained top 3"	ML	Sweet chemical odor
				0.0 16.4	Lt. gray fine silt, moist, medium (Pond muck)	ML	Sweet chemical odor
				17.0	Reddish tan fine silt (wea. Loess) firm, moist		Pond bottom @ 17 ft.
	5		47	0.0		ML	Sweet chemical odor
20							
	6		42	0.0	Same as above	ML	Sweet chemical odor
25							
	7	LFS-2 C (27-29)	47	25.5 0.0	Wet Same as above	ML	Sweet chemical odor
	8		38	0.0 29	Saturated @ 29 ft. Same as above except Lt. tan	ML	Slight chemical odor
30							

PROJECT NUMBER	BORING NUMBER LFS-2
PE00-0717	SHEET 2 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/3/00 FINISH 8/3/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE Interval	Type and Number	Recovery (IN)	~~Standard~~ Penetration ~~Test~~ PID ~~Results~~ ~~6"-6"-6"~~ ~~#/ft~~	SOIL DESCRIPTION Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	8		38	0.0	Lt. tan fine silt (wea. Loess), soft, saturated	ML	slight chemical odor
35	9		33	0.0	Same as above	ML	slight sweet chemical odor
	10		41	0.0	Same as above	ML	v. slight sweet chemical odor
40					TD @ 40 ft.		

Well Construction
Date Installed: 8/4/00
Constr. Material: 3/4" ID PVC pipe & 0.010 Screen
Back fill: Bentonite granules 0-43 ft. bgs
Filter: #3 Sand (2" ID Borehole) 26-48 ft. bgs
Screen: 3/4" ID 0.010 slot PVC 43-48 ft. bgs
Casing: 3/4" ID PVC pipe 0-43 ft. bgs
Bottom: 48 ft. bgs

Water Level
Date: 8/4/00
Time: ~~1144~~ 1646 ft. bgs/0747
Time: 0757 Depth: 46.5 ft. bgs
Time: 0940 Depth: 43.8 ft. bgs
Time: 1325 Depth: 39.7 ft. bgs
Time: 1527 Depth: 39.0 ft. bgs

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-2

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe Macro Sampler Sample Depth: 0 to 4 feet bgs

Type of Soil: Silt

Sample Analysis: VOC SVOC Cyanide Pesticide/PCB Atrazine, Cyanazine, dimsob Sample Container: VOC = 2oz Glass; SVOC = 4oz AmberGlass; Pesticide = 4oz AmberGlass; Atrazine = 4oz AmberGlass; Cyanide = 4oz Clear Glass

Sample Quantity Collected: 18 oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-2A (0-4)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-2

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe Macro Sampler Sample Depth: 8 to 10 feet bgs

Type of Soil: Silt

Sample Analysis: VOC SVOC Cyanide Pesticide/PCB Atrazine/Cyanazine/Dimseb

Sample Container: VOC = 2oz Glass; Cyanide = 4oz Glass; Other = 4oz Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-2B (8-10)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-2

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro Sampler Sample Depth: 27 to 29 feet bgs

Type of Soil: Silt

Sample Analysis: VOC SVOC Cyanide Pesticide/PCB Atrazine/Cyanazine/Dimeth Sample Container: VOC = 2 oz. Glass; Cyanide = 4oz. Glass; Others = 4oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe

---

Remarks:

Sample # LFS-2C (27-29)

GROUNDWATER SAMPLING LOG
PETRA ENVIRONMENTAL, INC.
Houston, Texas *Baton Rouge, Louisiana*

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS

Boring Number: LFS-2

Date Sampled: 8/4/00

Time Sampled: 1700

Sampling Method: VOC = ~~HCl~~ Bailer
Cyanide = Peristaltic Pump
Metals = Peristaltic Pump

Sample Depth: 43-48 feet bgs

:Sample Type: Grab

Sample Number(s): LS2-W

:Sample Quantity Collected: 790 ml

Sample Container: VOC = 40 ml glass vial
Cyanide = 500ml plastic
Metals = 250ml plastic

Sample Analysis: VOC
Cyanide
Ti Metals

Preservative: VOC = HCl
Cyanide = NaOH
metals = HNO_3

Purging: N/A wells set with Geopumbe

Time: ~~1700~~ HCl 1633 SWL(ft): 32.95 Well Depth(ft bgs): 48 Well Vol.(gal): N/A

	pH	Cond.	Temp.(degrees)	Vol. Removed.(gal)
1st WV				
2ndWV				
3rdWV				
Ave.			Total	

Remarks:

Sampling: Low well yield = approximately 1.2 liters per hour

Time: WL(ft):

pH: Cond(mhos): Temp.(degrees C F)

Remarks:

Field Technician: H. Dean Lowe

Signature / Date:
H. Dean Lowe 8/4/00

GROUNDWATER SAMPLING LOG
PETRA ENVIRONMENTAL, INC.
Houston, Texas *Baton Rouge, Louisiana*

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS - 2

Date Sampled: 8/5/00 Time Sampled: 1300

Sampling Method: Geoprobe vacuum Sample Depth: 43 - 48 feet bgs

:Sample Type: Grab Sample Number(s): LS 2 - W

:Sample Quantity Collected: 3 liters Sample Container: 1 liter - Amber Glass

Sample Analysis: Pesticide / PCB SVOC Atrazine/Cyanazine/Dinoseb Preservative: None

Purging: N/A well installed with Geoprobe

Time: 1200 SWL(ft): 37.98 Well Depth(ft bgs): 48 Well Vol.(gal): N/A

	pH	Cond.	Temp.(degrees)	Vol. Removed.(gal)
1st WV				
2ndWV				
3rdWV				
Ave.			Total	

Remarks:

Sampling: Low well yield = approx. 1.2 liters per hour

Time: WL(ft):

pH: Cond(mhos): Temp.(degrees C F)

Remarks:

Field Technician: H. Dean Lowe

Signature / Date:
H. Dean Lowe 8/5/00

PROJECT NUMBER	BORING NUMBER LFS-3
PE00-0717	SHEET 1 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/2/00 FINISH 8/2/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	~~Standard Penetration Test~~ PID Results ~~6"-6"-6" (N)~~	SOIL DESCRIPTION Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	1	LFS-3 A(0-4)	45	0.0	Tan fine Silt (Loëss fill), med. dry	ML (Fill)	
5	2		41	0.0 63	Becomes reddish tan at 6.3 ft. and slightly moist		Fill
					Reddish tan fine silt (weg. Loëss), medium, dry to slightly moist		Native Soil
10	3		44	0.0	Same as above		
	4	LFS-3 B(14-16)	38	0.0	Same as above	ML	
15	5		40	0.0	Same as above		
20	6		34	0.0	Same as above but less red color		
25	7	LFS-3 C(24-26)	36	0.0	Same as above - v. moist wet at 25.5		
					Saturated at 28.1 ft.		
30	8		42	0.0			

PROJECT NUMBER	BORING NUMBER LFS-3
PE00-0717	SHEET 2 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/2/00 FINISH 8/2/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	Standard Penetration Test PID Results ~~6"-6"-6"~~ (N)	SOIL DESCRIPTION Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	8		42	0.0	Tan fine silt (wea. Loëss), soft, saturated		
	9		40	0.0	Same as above	ML	No odor
35							
	10		37	0.0	Same as above		
40					TD = 40 ft.		

Well Construction
Date Installed: 8/4/00
Constr. Materials: 3/4" ID PVC Pipe & Screen
Backfill: Granular Bentonite
Filter: #3 Sand
Screen: 3/4" ID PVC 0.010 slot
Bottom:

0-25 ft. bgs
25-~~43~~ ft. bgs
43-~~45~~ ft. bgs
~~45~~ ft. bgs
45

Water Levels
Date; 8/4/00
Time: 1130 Depth: 40.0
Time: 1340 Depth: 40.10
Time: 1547 Depth: 38.91

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-3

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 0 to 4 feet bgs

Type of Soil: Silt

Sample Analysis: VOC SVOC Cyanide Pesticide/PCB Atrazine/Cyanazine/Dinoseb Sample Container: VOC = 2oz Glass Cyanide = 4oz Glass Others = 4oz Amber Glass

Sample Quantity Collected: 18oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-3A (0-4)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-3

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe Macro Sampler Sample Depth: 14 to 16 feet bgs

Type of Soil: Silt

Sample Analysis: SVOC VOC Pesticide/PCB Cyanide Atrazine/Cyanazine/Dimaseb Sample Container: VOC = 2 oz Glass; Cyanide = 4 oz Glass; Others = 4 oz Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-3 B(14-16)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS - 3

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro Sampler Sample Depth: 24 to 26 feet bgs

Type of Soil: Silt

Sample Analysis: VOC Pesticide/PCB Cyanide Atrazine/Ametryne/Dinoseb Sample Container: VOC = 2oz Glass; Cyanide = 4oz Glass; Others = 4 oz Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe

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Remarks:

Sample # LFS-3C (24-26)

GROUNDWATER SAMPLING LOG
PETRA ENVIRONMENTAL, INC.
Houston, Texas *Baton Rouge, Louisiana*

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS

Boring Number: LFS - 3

Date Sampled: 8/6/00

Time Sampled: 1300/1520

Sampling Method: VOC = SS Bailer
Other = Geoprobe vacuum

Sample Depth: 40-45 feet bgs

:Sample Type: Grab

Sample Number(s): LS3 - 4

:Sample Quantity Collected: Metals = 250ml
Cyanide = 500ml
Pesticide/PCB = 1 liter

Sample Container: Metals = 250 ml plastic
Cyanide = 500 ml plastic
Pesticide/PCB = 1 litre amber glass

Sample Analysis: T. Metals
Cyanide
Pesticide/PCB

Preservative: metals = HNO_3
cyanide = NaOH
Pesticide = None

Purging: N/A Well installed with Geoprobe

Time: 0710 SWL(ft): 38.9 Well Depth(ft bgs): 45 Well Vol.(gal): N/A

	pH	Cond.	Temp.(degrees)	Vol. Removed.(gal)
1st WV				
2nd WV				
3rd WV				
Ave.				Total

Remarks:

Sampling: V. low yield & turbid = approx. 1/4 liter per hour

Time: WL(ft):

pH: Cond(mhos): Temp.(degrees C F)

Remarks:

Field Technician: H. Dean Lowe

Signature / Date: H. Dean Lowe 8/6/00

PROJECT NUMBER	BORING NUMBER	SHEET
PE00-0717	LFS-4	1 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/3/00 FINISH 8/3/00 LOGGER H. Dean Love

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	Standard Penetration Test Results / PID (PPM)	SOIL DESCRIPTION: Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS: Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	1	LFS-4 A (0-4)	40	~~BDL~~ ~~50.5~~ 0.0	Lt. tan to reddish tan fine silt Fill	ML	
					Reddish tan fine silt (loess) Firm, moist		- Mod. sweet chemical odor @ 2.7 ft.
5	2	LFS-4 B (4-6)	42	50.5 4.6 1.0	Yellowish tan @ 4 ft. Tan @ 4.2 - V. wet 6.7 to 8 ft. Dry to slightly moist below 8 ft.		- Strong sweet chemical odor @ 4-4.2 ft. Moderate odor below 4.2 ft.
10	3		38	1.0	Same as above	ML	Detectable odor
15	4		36	1.3	Same as above		
	5		40	0.0	Becomes v. moist @ 18.2 ft.		slight odor
20	6		36	0.0	Same as above but moist - dry		
25	7	LFS-4 C (24-26)	34	0.0	Same as above		
	8		38	~~BDL~~ 0.0	Saturated @ 28.5 ft. Tan fine silt (weg. loess) Soft		slight odor
30							

PROJECT NUMBER	BORING NUMBER LFS-4
PE00-0717	SHEET 2 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/3/00 FINISH 8/3/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE: Interval	Type and Number	Recovery (IN)	~~Standard Penetration Test~~ PID ~~Results~~ (ppm)	SOIL DESCRIPTION: Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS: Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	8		38	0.0	Tan fine silt (wea. Loess) s.ft, saturated		V. Slight Sweet Chem. odor
	9		37	0.0	same as above	ML	
35							
	10		34	0.0	Same as above		V. slight odor
40							

TD @ 40 ft.

Well Construction
Date Installed: 8/4/00
Constr. Material: 3/4" ID PVC pipe & screen
Backfill: Bentonite Granules: 0 - 43 ft. bgs
Filter: #3 sand (2" ID borehole) 25 ~~20~~ - 48 ft. bgs
Screen: 3/4" ID, 0.010 slot PVC 43 - 48 ft. bgs
Casing: 3/4" ID PVC pipe 0 - 43 ft. bgs
Bottom: 48 ft. bgs

Water Level
Date: 8/4/00
Time: 1007 Depth: 42.9 ft. bgs
Time: 1027 Depth: 42.5 ft. bgs
Time: 1325 Depth: 38.7 ft. bgs
Time: 1533 Depth: 37.95 ft. bgs

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-4

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe Macro Sampler Sample Depth: 0 to 4 feet bgs

Type of Soil: Silt

Sample Analysis: VOC Pest/PCB SVOC Atrazine/Cyanazine/Dinoseb Cyanide T. Metals Sample Container: VOC = 2 oz Glass Cyanide = 4oz Glass Others = 4oz amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-4A (0-4)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-4

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 4 to 6 feet bgs

Type of Soil: Silt

Sample Analysis: VOC Pest/PCB SVOC Atrazine/Cyanazine/Dinoseb Cyanide T. Metals

Sample Container: VOC = 2 oz. Glass Cyanide = 4 oz. Glass Others = 4 oz amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-4B(4-6)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS - 4

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro Sampler Sample Depth: 24 to 26 feet bgs

Type of Soil: SiH

Sample Analysis: VOC Pest/PCB SVOC Atrazine/Cyanazine/Diesel Cyanide Sample Container: VOC = 2oz. Glass; Cyanide = 4oz. Glass; Others = 4oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-4C (24-26)

GROUNDWATER SAMPLING LOG
PETRA ENVIRONMENTAL, INC.
Houston, Texas *Baton Rouge, Louisiana*

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS

Boring Number: LFS-4

Date Sampled: ~~8/4~~ 8/5/00

Time Sampled: VOC, Cyanide, Metals = 1630; Pest/PCB, SVOC, Atrazine = 1800

Sampling Method: VOC = SS Bailer; Others = Geoprobe vacuum

Sample Depth: 43-48 feet bgs

:Sample Type: Grab

Sample Number(s): LS4-W

:Sample Quantity Collected: 3.8 liters

Sample Container: VOC = 40ml glass vial; Cyanide = 5amliter plastic; Metals = 250ml/liter plastic; Others = 1 liter Amber Glass

Sample Analysis: VOC Pesticide/PCB Atrazine/Cyanazine/Dinoseb Cyanide T. Metals

Preservative: VOC = HCL; Cyanide = NaOH; Metals = HNO_3; others = None

Purging: N/A well installed w/ Geoprobe

Time: 1802 SWL(ft): 38.5 Well Depth(ft bgs): 48 Well Vol.(gal): N/A

	pH	Cond.	Temp.(degrees)	Vol. Removed.(gal)
1st WV				
2ndWV				
3rdWV				
Ave.			Total	

Remarks:

Sampling: Low well yield = approximately 1 liter per hour

Time: WL(ft):

pH: Cond(mhos): Temp.(degrees C F)

Remarks:

Field Technician: H. Dean Lowe

Signature / Date:

H. Dean Lowe 8/5/00

PROJECT NUMBER	BORING NUMBER LFS - 5
PE00-0717	SHEET 1 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/3/00 FINISH 8/3/00 LOGGER H. Dean Lowe

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	Standard Penetration Test-PID Results	SOIL DESCRIPTION Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	1	LFS-5 A (0-4) MS(0-4) MSD (0-4)	39	0.0 2.3	Lt. tan fine silt w/ thin clay @ base, dry	ML	Fill No odor
					Tan fine silt, firm, dry	ML	Fill No odor
5	2		43	5.5 0.0	Gray-tan silty veriated Clay of low plasticity, med., Moist Becomes reddish tan @ 7ft.	CL	Fill slight chemical odor
				0.0			
10	3		40	10 0.0	Reddish brown silty clay, firm, with occas. manganese nodules, moist	CL	Chemical odor
15	4		32	0.0	Same as above but veriated	CL	Chemical odor
	5	LFS-5 B (16-18)	43	6.1	Yellowish colored lense		strong chemical odor
					Same as above	CL	
				0.0			
20	6		32	3.7	Same as above	CL	chemical odor
				21.7	Gray fine silt with hummus in top 6", moist, med. dense	ML	No chemical odor
				0.0			
25	7		31	0.0 29.9 0.0 25.2 0.0 25.8	Red silty clay, high plasticity Tan-gray laminated silt & silty clay Dk gray silty clay, with black humus specks, moist, stiff medium to low plasticity	CH ML/CL CL	No chemical odor No chemical odor No chemical odor
	8		31	28.5	Gray V. silty clay, low plasticity V. moist, soft	CL	No chemical odor
30							

PROJECT NUMBER	BORING NUMBER LFS-5
PE00-0717	SHEET 2 OF 2

SOIL BORING LOG

PROJECT Vicksburg Chemical Co Landfill LOCATION Vicksburg, MS

ELEVATION _____ DRILLING CONTRACTOR Petra Environmental, Inc.

DRILLING METHOD AND EQUIPMENT Geoprobe 5400 Truck Mounted

WATER LEVEL AND DATE _____ START 8/3/00 FINISH 8/3/00 LOGGER H. Dean Love

Depth Below Surface (FT)	SAMPLE Interval	SAMPLE Type and Number	SAMPLE Recovery (IN)	Standard Penetration Test/PID Results (M)	SOIL DESCRIPTION: Soil Name, Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy, USGS Group	Symbolic Log	COMMENTS: Monitoring Well Installation, Geotechnical Properties, Analytical Tests, Instrumentation
	8		31	0.0	Gray v. silty clay, low plasticity, with humus specks, v. moist firm to stiff	CL	No chemical odor
	9	LFS-5 C (34-36)	32	0.0 33.3 0.0 35 0.0	Reddish brown silty clay of moderate to high plasticity, stiff to hard grades to gray	CH	No chemical odor
35					Gray v. silty clay, low plasticity	CL	No chemical odor
	10		30	36.5 0.0	Reddish tan fine slightly clayey silt, soft, saturated	ML	No chemical odor
40					TD@ 40 ft.		

Well Construction
Date Installed : 8/4/00
Constr. Material : 3/4" pipe (PVC) & Screen
Backfill: Bentonite Granules 0 - 25
Filter : #3 Sand (2" ID Borehole) 25 - 48
Screen : 3/4" ID 0.010 slot PVC 43 - 48
Casing : 3/4" ID PVC pipe 0 - 48
Bottom: 48

Water Level
Date : 8/4/00
Time : 0900 Depth : 43.2
Time : 0915 Depth : 43.0
Time : 0930 Depth : 43.0
Time : 1320 Depth : 43.3
Time : 1540 Depth : 40.65

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-5

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 0 to 4 feet bgs

Type of Soil: Clay

Sample Analysis: VOC Pest / PCB SVOC Atrazine/Cyanazine/Dinoseb Cyanide Sample Container: VOC = 2 oz. Glass; Cyanide = 4oz. Glass; Others = 4 oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-5A (0-4)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-5

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 0 to 4 feet bgs

Type of Soil: Clay

Sample Analysis: VOC Pest / PCB SVOC Atrazine/Cyanazine/Dinoseb Cyanide

Sample Container: VOC = 2 oz. Glass; Cyanide = 4oz. Glass; Others = 4 oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-5MS (0-4)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-5

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 0 to 4 feet bgs

Type of Soil: Clay

Sample Analysis: VOC Pest / PCB SVOC Atrazine/Cyanazine/Dinoseb Cyanide

Sample Container: VOC = 2 oz. Glass; Cyanide = 4oz. Glass; Others = 4 oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: None

Field Technician: H. Dean Lowe Signature / Date: H Dean Lowe 8/3/00

Remarks:

Sample # LFS-5 MSD (0-4)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-5

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 16 to 18 feet bgs

Type of Soil: Clay

Sample Analysis: VOC Pest / PCB SVOC Atrazine/Cyanazine/Dinoseb Cyanide Sample Container: VOC = 2 oz. Glass; Cyanide = 4oz. Glass; Others = 4 oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H Dean Lowe 8/3/00

Remarks:

Sample # LFS-5B (16-18)

SOIL SAMPLING LOG

PETRA ENVIRONMENTAL, INC.

Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co.Landfil Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-5

Date Sampled: 8/3/00 Time Sampled:

Sampling Method: Geoprobe macro sampler Sample Depth: 34 to 36 feet bgs

Type of Soil: Clay

Sample Analysis: VOC Pest / PCB SVOC Atrazine Cyanazine/Dinoseb Cyanide Sample Containers: VOC = 2 oz. Glass; Cyanide = 4oz. Glass; Others = 4 oz. Amber Glass

Sample Quantity Collected: 18 oz Preservative Used: NONE

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/3/00

Remarks:

Sample # LFS-5 C (34-36)

GROUNDWATER SAMPLING LOG
PETRA ENVIRONMENTAL, INC.
Houston, Texas Baton Rouge, Louisiana

Project Name: Vicksburg Chemical Co. Landfill Site Name: Vicksburg Chemical Co. Plant

Location: Vicksburg, MS Boring Number: LFS-5

Date Sampled: 8/6/00 Time Sampled: VOC = 0705, Other = 1200

Sampling Method: VOC = SS Bailer, Geoprobe Vaccum Sample Depth: ~~43~~ 48 feet bgs

:Sample Type: Grab Sample Number(s): LSS-W

:Sample Quantity Collected: 1.8 liters Sample Container: VOC = 40ml glass, Other = 1 liter amber glass

Sample Analysis: VOC, Pesticide/PCB, Atrazine/Cyanazine/Dinoseb, SVOC Preservative: VOC = HCL, Other = None

Purging: N/A Well installed with Geoprobe

Time: 0700 SWL(ft): 40.5 Well Depth(ft bgs): 48 Well Vol.(gal): N/A

	pH	Cond.	Temp.(degrees)	Vol. Removed.(gal)
1st WV				
2ndWV				
3rdWV				
Ave.				Total

Remarks:

Sampling: Well yield = 1.75 liters in 2½ hour. Slower after 2 hours

Time: WL(ft):

pH: Cond(mhos): Temp.(degrees C F)

Remarks:

Field Technician: H. Dean Lowe Signature / Date: H. Dean Lowe 8/6/00

MSSI
Magnolia Scientific Services, Inc.

CHAIN OF CUSTODY RECORD
Box 304

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 EXT 219 FAX: 601-638-0890
PROJECT: RFI - Sump 2
SAMPLE COLLECTOR: KSL

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Volatiles	Semi Vols	Metals	Pest / PCB	Ars / Cyanide / Dioxin				LABORATORY IDENTIFICATION CODE
1	10/3/00	9:00 a.m.	• 2-1-A	1	Soil		X								
2			• 2-1-A	1				X	X						
3			• 2-1-A	1						X	X				MS02234
4			• 2-1-B	1			X								
5			• 2-1-B	1				X	X						
6			• 2-1-B	1						X	X				MS02235
7			• 2-7-A	1			X								
8			• 2-7-A	1				X	X						
9			• 2-7-A	1						X	X				MS02236
10															

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	10/3/00	1615		10/4	1125
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				10/4	1205

COMMENTS: Rcd 10/4/2000 1330 RLC MSSI

129 FRONT STREET PURVIS, MS 39475 PHONE: (601) 794-2309 FAX (601) 794-2547 email: info@magnoliascientific.com

MSSI
Magnolia Scientific Services, Inc.

CHAIN OF CUSTODY RECORD

Box 485

page 1

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1431 ext 219 FAX: 601-638-0890
PROJECT: RCRA - SWMU 2
SAMPLE COLLECTOR: K & L

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Volatiles	Semi - Vol	Metals	Pest / PCB	Ars / Cyanide / Rvrs				LABORATORY IDENTIFICATION CODE
1	10/3/00	900	2-3-A	1	Soil		X								
2			2-3-A	1				X	X						
3			2-3-A	1						X	X				MS02238
4			• 2-3-B	1			X								
5			• 2-3-B	1				X	X						
6			• 2-3-B	1						X	X				MS02239
7			• 2-4-A	1			X								
8			• 2-4-A	1				X	X						
9			• 2-4-A	1						X	X				MS02240
10															

Analysis Requested

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	10/4/00	1045		10-4	1045
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				10/4	1205

COMMENTS: Rcd @ MSSI 10/4/2000 1330 RLC

129 FRONT STREET PURVIS, MS 39475 PHONE: (601) 794-2309 FAX (601) 794-2547 email: info@magnoliascientific.com

MSSI
Magnolia Scientific Services, Inc.

CHAIN OF CUSTODY RECORD

Box 985

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 ext 219 FAX: 601-638-0890
PROJECT: RFI - Swmu 2
SAMPLE COLLECTOR: KEL

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Volatiles	Semi Volatiles	Metals	PCB Pest	Arsenic Cyanide Barium				LABORATORY IDENTIFICATION CODE
1	10/3/00	0900	2-4-B	1	Soil		X								
2			2-4-B	1				X	X						
3			2-4-B	1						X	X				MS02241
4			• 2-5-A	1			X								
5			• 2-5-A	1				X	X						
6			• 2-5-A	1						X	X				MS02242
7			• 2-5-B	1			X								
8			• 2-5-B	1				X	X						
9			• 2-5-B	1						X	X				MS02243
10															

RELINQUISHED BY: (SIGNATURE) — DATE 10/3/00 — TIME 1003 — RECEIVED BY: (SIGNATURE) — DATE 10-4 — TIME 0813

RELINQUISHED BY: (SIGNATURE) — DATE — TIME — RECEIVED BY: (SIGNATURE) — DATE 10/4 — TIME 1205

COMMENTS: rcd @MSSI 10/4/2000 1330 RWC

129 FRONT STREET PURVIS, MS 39475 PHONE: (601) 794-2309 FAX (601) 794-2547 email: info@magnoliascientific.com

MSSI
Magnolia Scientific Services, Inc.

CHAIN OF CUSTODY RECORD

page 3

Box 485

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 ext 219 FAX: 601-638-0890
PROJECT: RFI - SWMU 2
SAMPLE COLLECTOR: K&L

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Volatiles	Semi Volatiles	Metals	Pest/PCBs	Atrazine/Cyanazine					LABORATORY IDENTIFICATION CODE
1	10/3/00	9:00	2-6-A	1	Soil		X						MSC 2244			
2	↓	↓	2-6-A	1	↓			X	X							
3			2-6-A	1						X	X					
4			2-6-B	1			X						MSC 2245			
5			2-6-B	1				X	X							
6			2-6-B	1						X	X					
7																
8																
9																
10																

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	10/4/00	1023	[signature]	10-4-00	1023
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
			[signature]	10/4	1205

COMMENTS: Rcvd @MSSI 10/4/2000 1330 RBC

MSSI
Magnolia Scientific Services, Inc.

CHAIN OF CUSTODY RECORD

Box 304

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1431 ext 219 FAX: 601-638-0890
PROJECT: RFI - SWMU 2
SAMPLE COLLECTOR: KFL

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Volatiles	Semi Volatiles	Metals	Pest / PCB	Anal / Cyanide / Phenol	LABORATORY IDENTIFICATION CODE
1	10/3/00	9:00	2-7-A-MS/MSD	1	Soil		X					
2			2-7-A-MS	1				X	X			
3			2-7-A-MSD	1				X	X			
4			2-7-A-MS	1						X	X	
5			2-7-A-MSD	1						X	X	
6			2-7-B-MS/MSD	1			X	X	X			
7			2-7-B	1				X	X			
8			2-7-B							X	X	MS02247
9												
10												

RELINQUISHED BY: (SIGNATURE) — DATE 10/3/00 TIME 1003 — RECEIVED BY: (SIGNATURE) — DATE 10-4 TIME 1003

RELINQUISHED BY: (SIGNATURE) — DATE — TIME — RECEIVED BY: (SIGNATURE) — DATE 10/4 TIME 1205

COMMENTS: Rec'd 10/4/2000 1330 RLC MSSI

129 FRONT STREET PURVIS, MS 39475 PHONE: (601) 794-2309 FAX (601) 794-2547 email: info@magnoliascientific.com

MSSI
Magnolia Scientific Services, Inc.

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell EST
PHONE: 601-636-1231 x19 FAX: 601-638-0890
PROJECT: RFI - SWMU 4
SAMPLE COLLECTOR: LFL

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Volatiles	Semi. Volatiles	Metals	Pest / PCB	Air / Explosives / Dioxin	LABORATORY IDENTIFICATION CODE
1	10-3-00	2 00	· 4-1		S.	1	X					
2			· 4-1			1		X	X			MSO 2219
3			· 4-1			1				X	X	
4			· 4-2			1	X					
5			· 4-2			1		X	X			
6			· 4-2			1				X	X	MSO 2220
7			· 4-3			1	X					
8			· 4-3			1		X	X			
9			· 4-3			1				X	X	MSO 2221
10												

RELINQUISHED BY: (SIGNATURE) — DATE — TIME — RECEIVED BY: (SIGNATURE) — DATE 10-4-00 — TIME 1403

RELINQUISHED BY: (SIGNATURE) — DATE — TIME — RECEIVED BY: (SIGNATURE) — DATE 10/4 — TIME 1205

COMMENTS: Rcd @ MSSI 10/4/2000 1330 RLC

129 FRONT STREET PURVIS, MS 39475 PHONE: (601) 794-2309 FAX (601) 794-2547 email: info@magnoliascientific.com

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CHAIN OF CUSTODY RECORD

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 EXT 219 FAX: 601-638-0890
PROJECT: RFL - SWMU 4
SAMPLE COLLECTOR: KIL

Analysis Requested: Volatiles; Semi Volatiles; Metals; Pest / PCB; Am/Cyanide/Dioxins

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Volatiles	Semi Volatiles	Metals	Pest / PCB	Am/Cyanide/Dioxins				LABORATORY IDENTIFICATION CODE
1	10-3-00	2:00	4-4	1	Soil		X								
2			4-4	1				X	X						MSO 2222
3			4-4	1						X	X				
4			4-5	1			X								
5			4-5	1				X	X						MSO 2223
6			4-5	1						X	X				
7			4-6	1			X								
8			4-6	1				X	X						MSO 2224
9			4-6	1						X	X				
10															

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	10/4/00	1004	[signature]	10-4-00	1004
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
			[signature]	10/4	1205

COMMENTS: Rec'd @ MSSI 10/4/2000 1330 [signature]

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CHAIN OF CUSTODY RECORD

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For SWMU 13

(SWMU 79 Also in Cov(-v)

CLIENT INFORMATION

COMPANY: Vicksburg Chemical Company

ADDRESS: Rifle Range Road

Vicksburg Chemical

CONTACT: Stan Boswell

PHONE: 601-636-1231 ext 219 FAX: 601-638-0890

PROJECT: REI - SWMU 13

SAMPLE COLLECTOR: L

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Arsenic/Cyanide Reactive	Arsenic	Tetraethyl							LABORATORY IDENTIFICATION CODE
1	10/3	1100	13-1	1	Soil		X	X	X							MSO 2225
2			13-2	1			X	X	X							MSO 2226
3			13-3	1			X	X	X							MSO 2227
4			13-4	1			X	X	X							MSO 2228
5			13-5	1			X	X	X							MSO 2229
6			13-6	1			X	X	X							MSO 2230
7			13-7	1			X	X	X							MSO 2231
8			13-8	1			X	X	X							MSO 2232
9			13-9	1			X	X	X							MSO 2233
10																

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	10/4	1405		10/4	1405
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				10/4	1205

COMMENTS: Rcd @ MSSI 10/4/2000 1320 RW CHCDEDDBA

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SWM430

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Rd
Vicksburg MS
CONTACT: Steve Rowell
PHONE: 601-636-1231 Ext 216 FAX: 601-636 4190
PROJECT: RFI - SWM430
SAMPLE COLLECTOR: KCL

Analysis Requested: TPH

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	TPH									LABORATORY IDENTIFICATION CODE
1	10/4/00	10:36	30-1	1	Soil		X									MSO 2254
2	↓	↓	30-2	1	↓		X									MSO 2255
3	↓	↓	30-3	1	↓		X									MSO 2256
4																
5																
6																
7																
8																
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			[signature]	10/4	1205

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For sums 34
(sums 35 also on custody)

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 ext 219 FAX: 601-638-0890
PROJECT: EPI SUMM 34
SAMPLE COLLECTOR: KFL

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: BTEX	TPH	Arsenic/Chromium/Lead 6010B	Arsenic	Total Arsenic				LABORATORY IDENTIFICATION CODE
1	4-4-00	6 am	34-1	1	S.I		X	X							
2			34-1	1					X	X	X				MSO2248
3			34-2	1			X	X							
4			34-2	1					X	X	X				MSO2249
5			34-3	1			X	X							
6			34-3	1					X	X	X				MSO2250
7			34-4	1			X	X							
8			34-4	1					X	X	X				MSO2251
9			34-5	1			X	X							
10			34-5	1					X	X	X				MSO2252

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	10/4/00	6 am		10-4-00	900
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				10/4	1205

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rick Ranch Road
Vicksburg MS
CONTACT: Steve Boswell
PHONE: 601-636-1431 x19 FAX: 601-630-0950
PROJECT: Pat Summa 2
SAMPLE COLLECTOR: K & L

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	VOC	SVOC	Metals	Pest/PCB	Herb/Glyph/Diquat					LABORATORY IDENTIFICATION CODE
1	10/10/11	9AM	2-2-A	1			X									
2			2-2-A	1				X	X							
3			2-2-A	1						X	X					
4			2-2-B	1			X									
5			2-2-B	1				X	X							
6			2-2-B	1						X	X					
7																
8																
9																
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[signature]			[signature]	10/10	1415

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Rifle Range Road

Vicksburg, MS

CONTACT: Steve Bucell

PHONE: 601-636-4431 ext 710 FAX: 601-638-6250

PROJECT: TPE 1 - Shaft 5

SAMPLE COLLECTOR:

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Radiological Mercury	Arsenic	Tritium							LABORATORY IDENTIFICATION CODE
1	10/5/00		5-1	1	Soil		X	X	X							
2			5-2	1			X	X	X							
3			5-3	1			X	X	X							
4			5-4	1			X	X	X							
5			5-5	1			X	X	X							
6			5-6	1			X	X	X							
7			5-7	1			X	X	X							
8			5-8	1			X	X	X							
9			5-9	1			X	X	X							
10	✓		5-10	1	✓		X	X	X							

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	10/10				
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				10/10	1415

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Triple Range Road
Vicksburg, MS

CONTACT: Steve Boswell

PHONE: 601-638-1771 ext 715 FAX: 601-638-0890

PROJECT: RFI - Solids 5

SAMPLE COLLECTOR: K, L, EZ

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Organics/Cyanide/Dioxins	Pesticides	Toxicity							LABORATORY IDENTIFICATION CODE
1	10/5/04		5-11	1	Soil		X	X	X							
2	↓		5-12	1	↓		X	X	X							
3			5-13	1			X	X	X							
4			5-14	1			X	X	X							
5			5-15	1			X	X	X							
6	↓		5-16	1	↓		X	X	X							
7																
8																
9																
10																

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	10/6/04				
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				10/6/04	1915

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Burwell
PHONE: 601-636-1231 x10 FAX: 601-638-6896
PROJECT: MCI - SWMU 7
SAMPLE COLLECTOR: K, L & Z

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Atrazine/Cyanazine	Dinoseb	Arsenic	Toxaphene	Toluene					LABORATORY IDENTIFICATION CODE
1	10/7/04		7-1-A	1	Soil		x	x	x							
2	↓		7-1-A	1	↓					x						
3			7-1-B	1			x	x	x							
4			7-1-B	1						x						
5			7-1-C	1			x	x	x							
6			7-1-C	1						x						
7			7-2-A	1			x	x	x							
8			7-2-A	1						x						
9			7-2-A	1			x	x	x							
10	↓		7-2-B	1	↓					x						

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[signature]	10/7/04		[signature]		
[signature]			[signature]	9/10	1415

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Pipe Range Road
Vicksburg MS

CONTACT: Steve Bissell

PHONE: 601-636-1231 ext 719 FAX: 601-635-0890

PROJECT: RFI - SWMU 7

SAMPLE COLLECTOR: K. Cox Z

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Arsenic/Cyanide/Diquat	Diquat	Arsenic	Thallium	Toluene					LABORATORY IDENTIFICATION CODE
1	10/1/10		7-2-C	1	Soil		X	X	X							
2			7-2-C	1						X						
3			7-3-A	1			X	X	X							
4			7-3-A	1						X						
5			7-3-B	1			X	X	X							
6			7-3-B	1						X						
7			7-3-C	1			X	X	X							
8			7-3-C	1						X						
9																
10																

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	10/1/10				
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				10/1/10	1415

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Buswell
PHONE: 601-636-1231 ext 219 FAX: 601-638-0896
PROJECT: TRFI - Swmu E
SAMPLE COLLECTOR: K, L + I

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Aromatic Amines / Dinitro	Arsenic	Explosives	Toluene					LABORATORY IDENTIFICATION CODE
1	10/5/06		E-1, concrete	1	concrete dust		X	X	X						
2			E-1, concrete	1	concrete dust					X					
3			E-1, 2-4	1	Soil		X	X	X						
4			E-1, 2-4	1						X					
5			E-1, 6-8	1			X	X	X						
6			E-1, 6-8	1						X					
7			E-1, 10-12	1			X	X	X						
8			E-1, 10-12	1						X					
9															
10															

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[signature]	10/6/06		[signature]		
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[signature]			[signature]	10/10	1415

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Bosworth
PHONE: 601-636-1231 EXT 219 FAX: 601-638-6626
PROJECT: RFI - SWMU 14
SAMPLE COLLECTOR: K. Lee

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Atrazine/Cyanazine Diuicides	Arsenic	Toxaphene							LABORATORY IDENTIFICATION CODE
1	10/7/00		14-1-A	1	Soil		X	X	X							
2			14-1-B	1			X	X	X							
3			14-1-C	1			X	X	X							
4			~~14-1-D~~ 14-2-A	1			X	X	X							
5			14-2-B	1			X	X	X							
6			14-2-C	1			X	X	X							
7			~~14-2-D~~ 14-3-A	1			X	X	X							
8			14-3-B	1			X	X	X							
9			~~14-3-C~~	1			X	X	X							
10			~~14-3-D~~	1			X	X	X							

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	10/7/00				
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				10/10	1415

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 ext. 219 FAX: 601-638-0890
PROJECT: RFI - SWMU 14
SAMPLE COLLECTOR: K, C & Z

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Atrazine/Cyanazine/Dinoseb	Arsenic	Toxaphene							LABORATORY IDENTIFICATION CODE
1	10/7/00		14-4-A	1	Soil		X	X	X							
2	↓		14-4-B	1	↓		X	X	X							
3	↓		14-4-C	1	↓		X	X	X							
			~~14-4-D~~	~~1~~			~~X~~	~~X~~	~~X~~							
4	↓		14-5-A	1	↓		X	X	X							
5	↓		14-5-B	1	↓		X	X	X							
6	↓		14-5-C	1	↓		X	X	X							
7	↓		14-5-D	1	↓		X	X	X							
8																
9																
10																

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[illegible]			[illegible]	10/10	1415

COMMENTS:

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Rifle Range Road
Vicksburg, Mississippi

CONTACT: Steve Boswell

PHONE: 601-636-1331 219 FAX: 601-638-0896

PROJECT: RFI - SWMU 18

SAMPLE COLLECTOR: K & L

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Metallic Cyanides (Total)	Arsenic	Tetraethyl Lead							LABORATORY IDENTIFICATION CODE
1	1/4/00	11:20	18-1	1	Soil		X	X	X							
2			18-2				X	X	X							
3			18-3	1			X	X	X							
4			18-4	1			X	X	X							
5	V	V	18-5	1	V		X	X	X							
6																
7																
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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Rifle Range Road

Vicksburg, MS

CONTACT: Steve Boswell

PHONE: 601-636-1731 ext 219 FAX: 601-638-0890

PROJECT: TCP - Summer 20

SAMPLE COLLECTOR: K. Cox

#	DATE	≈ TIME	SAMPLE ID	# Cont.	Matrix	Pres	Arsenic, Dissolved	Arsenic	Thallium, Dissolved	Thallium						LABORATORY IDENTIFICATION CODE
1	10/6/20		20-1-A	1	Soil		X	X	X							
2			20-1-A	1						X						
3			20-1-B	1			X	X	X							
4			20-1-B	1						X						
5			20-2-A	1			X	X	X							
6			20-2-A	1						X						
7			20-2-B	1			X	X	X							
8			20-2-B	1						X						
9			20-3-A	1			X	X	X							
10			20-3-A	1						X						

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Rifle Range Road
Vicksburg MS

CONTACT: Steve Burrell

PHONE: 601-636-1231 ext 719 FAX: 601-638-0890

PROJECT: RFI - Sump 20

SAMPLE COLLECTOR: K. L. E. Z.

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Arsenic/Cyanide/Barium/Mercury	Arsenic	Thallium	Thallium						LABORATORY IDENTIFICATION CODE
1	10/10		20-3-B	1	Soil		X	X	X							
2			20-3-B	1						X						
3			20-4-A	1			X	X	X							
4			20-4-A	1						X						
5			20-4-B	1			X	X	X							
6			20-4-B	1						X						
7		1715	20-5-A	1			X	X	X							
8			20-5-A	1						X						
9			20-5-B	1			X	X	X							
10			20-5-B	1						X						

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Kirle Range Road

Vicksburg, MS

CONTACT: Steve Boswell

PHONE: 601-636-1431 x19 FAX: 601-638-0690

PROJECT: RFI - SWMU 20

SAMPLE COLLECTOR: K, C & Z

Analysis Requested

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Hexavalent Chromium/ Dissolved	Arsenic	Trivalent Chromium	Total Chromium						LABORATORY IDENTIFICATION CODE
1	10/6/00	1300	20-6-A	1	Soil		X	X	X							
2			20-6-A	1						X						
3			20-6A	1			X	X	X							
4		↓	20-6B	1						X						
5			20-7A	1			X	X	X							
6			20-7-A	1						X						
7			20-7-B	1			X	X	X							
8			20-7-B	1						X						
9			20-8-A	1			X	X	X							
10	↓		20-8-A	1	↓					X						

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	10/7/00				
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			Ray Coon	10/10	1415

COMMENTS:

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CHAIN OF CUSTODY RECORD

page 2

CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 ext 216 FAX: 601-638-0890
PROJECT: RFI - SWMU 70
SAMPLE COLLECTOR: K, L & Z

Analysis Requested

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Atrazine/Cyanazine/Dinoseb	Arsenic	Toxaphene	Toluene						LABORATORY IDENTIFICATION CODE
1	1/11		20-8-B	1	Soil		X	X	X							
2			20-8-B	1						X						
3			20-9-B	1			X	X	X							
4			20-9-B	1						X						
5			20-9-B	1			X	X	X							
6			20-9-B	1						X						
7			20-10-A	1			X	X	X							
8			20-10-A	1						X						
9			20-10-B	1			X	X	X							
10			20-10-B	1						X						

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[signature]			[signature]		
[signature]			[signature]	11/10	1415

COMMENTS:

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CLIENT INFORMATION

COMPANY: Vicksburg Chemical
ADDRESS: Rifle Range Road
Vicksburg, MS
CONTACT: Steve Boswell
PHONE: 601-636-1231 ext 219 FAX: 601-638-0890
PROJECT: RFI - SWMU 20
SAMPLE COLLECTOR:

Analysis Requested: Magnesium/Guanidine/Nitrate; Arsenic; Triaphenyl; Toluene

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Mag./Guan./Nitrate	Arsenic	Triaphenyl	Toluene						LABORATORY IDENTIFICATION CODE
1	11/6		20-11-A	1	Soil		x	x	x							
2	↓		20-11-A	1	↓					x						
3	↓		20-11-B	1	↓		x	x	x							
4	↓		20-11-B	1	↓					x						
5	11/7		20-12-A	1	↓		x	x	x							
6	↓		20-12-A	1	↓					x						
7	↓		20-12-B	1	↓		x	x	x							
8	↓		20-12-B	1	↓					x						
9	↓		20-13-A	1	↓		x	x	x							
10	↓		20-13-A	1						x						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	11/7/00		[signature]	11/7	
[signature]	11-10		[signature]	11/10	1415

COMMENTS:

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CHAIN OF CUSTODY RECORD

page ● ?

CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Rifle Range Road
Vicksburg, MS

CONTACT: Steve Boswell

PHONE: 601-636-1231 ext 310 FAX: 601-634-0490

PROJECT: RFI - SWMU 20

SAMPLE COLLECTOR: K, L & Z

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Organic Hydrocarbons / Pesticides	Arsenic	Toxaphene	[illegible]						LABORATORY IDENTIFICATION CODE
1	10/7/00		20-13-B				x	x	x							
2			20-13-B							x						
3			20-14-A				x	x	x							
4			20-14-A							x						
5			20-14-B				x	x	x							
6			20-14-B							x						
7			20-15-A				x	x	x							
8			20-15-A							x						
9			20-15-B				x	x	x							
10	↓		20-15-B							x						

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[signature]	10/9/00		[signature]	10-?	
[signature]	10/10		[signature]	10/10	1415

COMMENTS:

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page 2

CLIENT INFORMATION

COMPANY: Vicksburg Chemical

ADDRESS: Rifle Range Road
Vicksburg MS

CONTACT: Lou Burwell

PHONE: 601-636-1331 210 FAX: 601-638-0890

PROJECT: AFI - Summer

SAMPLE COLLECTOR: K L S Z

#	DATE	TIME	SAMPLE ID	# Cont.	Matrix	Pres	Analysis Requested: Organic/Inorganic Arsenic	Arsenic	Arsenic Speciation	Total Arsenic						LABORATORY IDENTIFICATION CODE
1	10/7/10		20-16-A				X	X	X							
2			20-16-A							X						
3			20-16-B				X	X	X							
4			20-16-B							X						
5			20-15-B-MS				X	X	X							
6			20-15-B-MS							X						
7			20-15-B-MSD				X	X	X							
8			20-15-B-MSD							X						
9																
10																

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[signature]	10/7/10		[signature]	10-7	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]			[signature]	10/10	1415

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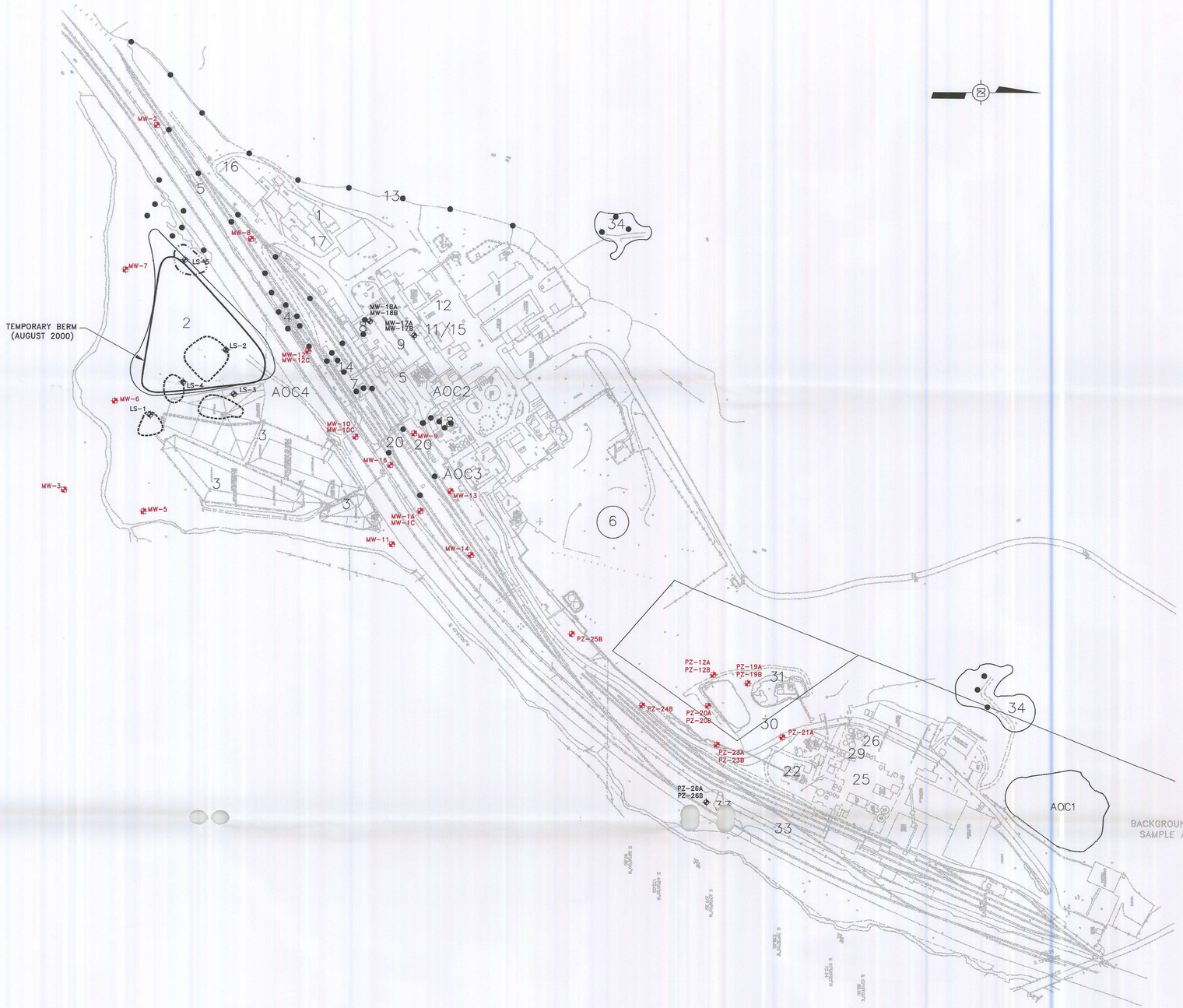

SWMU NUMBER — SOUTH PLANT

1	CONTAINER (DRUM) STORAGE AREA
2	INACTIVE LANDFILL
3	SURFACE IMPOUNDMENT (SOUTH PLANT)
4	ACTIVATED CARBON TREATMENT UNITS
5	SOUTH PLANT DRAINAGE SYSTEMS
6	WASTEWATER STORAGE (HILL) TANKS
7	FORMER DINOSEB PRODUCTION AREA
8	DINOSEB LOADING/UNLOADING AREA
9	DINOSEB DRUMMING AREA
11	FORMER MSMA PRODUCTION AREA
12	FORMER MSMA SALT UNLOADING AREA
13	SOUTH PLANT DRAINAGE DITCHES
14	FORMER TOXAPHENE PRODUCTION AREA
15	FORMER METHYL PARATHION PRODUCTION AREA
16	FORMER ATRAZINE PRODUCTION AREA
17	RETURNED PRODUCT STORAGE AREA
18	FORMER BLUE TANK AREA
20	RAILROAD CAR UNLOADING STATION

NORTH PLANT

22	NORTH PLANT NEUTRALIZATION SYSTEM
23	EQUALIZATION/NEUTRALIZATION POND (NORTH PLANT)
25	NORTH PLANT WASTEWATER PIPES
26	C-10 SCRUBBER
29	OIL COLLECTION UNIT
30	NORTH PLANT WASTE OIL ACCUMULATION AREA
31	NO. 6 FUEL OIL AREA
33	NORTH PLANT DRAINAGE DITCHES

BOTH PLANTS

34	SURPLUS EQUIPMENT STORAGE (JUNKYARD)

AOC NUMBER — AOC NAME

1	FISH POND (NORTH PLANT)
2	DRUM STORAGE AREA
3	NEUTRALIZATION TANKS (SOUTH PLANT)
4	CHEMICAL CRYPT (SEPTIC TANKS)

LEGEND

- DEEP BORINGS LS-1, LS-2, LS-3, LS-4, LS-5
- MW-17A, MW-17B, MW-18A, MW-18B, MW-10C MW-12C, MW-1C, & PZ-26A/PZ-26B ARE PROPOSED LOCATIONS.
- SHALLOW BORINGS
- EXISTING MONITOR WELLS
- CLOSED PONDS
- CLOSED LANDFILL

SCALE
200 0 200 400 FEET

REV	DESCRIPTION OF REVISION	BY	DATE
2	SHOW SWMU 2 INVESTIGATION AUGUST 2000	PCG	8/11/00
1	SHOW NORTH POND WELLS; RELOCATE MW-18A/MW-18B; ADD MW-1C, PZ-26A/PZ-26B	RDK	7/18/00

VICKSBURG CHEMICAL COMPANY
VICKSBURG, MISSISSIPPI

URS Greiner Woodward Clyde
2822 O'Neal Lane
Baton Rouge, Louisiana 70816
225/751-1873

REFERENCE DRAWINGS

SCALE: 1"=200'
DESIGNED:
DRAWN: PCG
CHECKED: RDK
PEER REVIEWED: 11/15/99
DATE: 7/18/00

RCRA FACILITY INVESTIGATION

SWMU LOCATIONS, RFI SOIL AND CONCRETE SAMPLE POINTS, GWA MONITOR WELL LOCATIONS

REVISION: 2
PROJECT: 35092B007C
DRAWING: 1

K:\CAD\WORK\35092B007C\dwg, 10/17/2000 10:51:27 AM