U.S. ENVIRONMENTAL PROTECTION AGENCY

TECHNICAL ENFORCEMENT SUPPORT

AT

HAZARDOUS WASTE SITES

TRIP REPORT
GROUNDWATER SAMPLING
MONSANTO J.F.QUEENY PLANT SITE
ST. LOUIS, MISSOURI

TES X
EPA CONTRACT NO. 68-W9-0007
EPA WORK ASSIGNMENT NO. R07047
EPA REGION VII

METCALF & EDDY
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JACOBS PROJECT NO. 13-E082-00

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R00105667
RCRA RECORDS CENTER
Acc#11

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1.0 INTRODUCTION

During the period November 8 through November 11, 1993, Jacobs Engineering Group Inc. (Jacobs) representative Bill Gresham was present at the Monsanto J.F. Queeny facility (Monsanto) in St. Louis, Missouri. The purpose of this visit was to perform oversight and obtain split groundwater samples on behalf of the U.S. Environmental Protection Agency (EPA). These procedures were performed by representatives of Geraghty & Miller, Inc. Environmental Services (G & M), which is Monsanto's contractor. Subcontract Geoprobe services were performed by GeoTrace, Inc. (GTI). Jacobs, subcontractor to Metcalf & Eddy, Inc. (M&E), under the Technical Enforcement Support (TES) X Contract (No. 68-W9-0007), performed the work as part of Work Assignment No. R07047.

2.0 PROJECT DESCRIPTION

2.1 Site Background

The Monsanto facility is located on a 63-acre site in St. Louis, Missouri (Figure 1). The site is located approximately 500 to 800 feet west of the Mississippi River in a heavily populated and industrialized area accessible to interstate highways and large railroad centers.

This plant began manufacturing in 1902. Over 200 different products, in over 800 different forms, have been manufactured here. Its major product families have included process chemicals, such as maleic anhydride, fumaric acid, trichlorocarbanilide (TCC), toluene sulfonic acid, and nitrophenetole; plasticizers, such as phthalate esters and toluene sulfonamides; synthetic functional fluids such as pydrauls, skydrols, and coolanols; food and fine chemicals such as salicylic acid, aspirin, methyl salicylate, benzoic acid, and ethavan; and agricultural chemicals such as Lasso™.

Previous investigations at the site began in 1983 with a plant-wide hydrogeologic investigation that included installation of sixteen (16) monitoring wells. In 1984, twelve (12) additional monitoring wells were installed plant-wide. Organic compounds were detected in several groundwater monitoring wells. In 1985, eight (8) soil borings and three (3) monitoring wells were installed near Building FF. A nonaqueous phase liquid (NAPL) was detected in two (2) of the monitoring wells (MW-14 and VW-2). Four (4) recovery wells were installed near Building FF to recover the PCE and reduce the extent of contamination.

In 1986, Monsanto changed environmental consultants from Environmental Science & Engineering, Inc. (ESE) to G & M, who initiated investigation of the NAPL detected in monitoring well MW-14, located northeast of the Lasso™ production and railcar unloading area. Five (5) soil borings and five (5) monitoring wells were installed in the Lasso™ production area to determine the areal and vertical extent of contamination. Organic compounds associated with Lasso™ production were detected in all five (5) newly installed monitoring wells, including NAPL in MW-14. In April 1988, G & M conducted two (2) additional subsurface investigations at the coal storage yard and at the former bulk chemical terminal. Twelve (12) soil borings and five (5) monitoring wells were installed. Results from this investigation indicated that volatile organic compounds (VOC) were detected in overlying fill material at the former bulk chemical terminal and at the coal storage yard. In March, 1992, G & M submitted a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report which characterized the vertical and horizontal extent of contamination in groundwater and soil. The RFI Report concluded that the contamination present at the site did not pose a significant health risk to the public. In May and June of 1993, O'Brien & Gere Engineers, Inc. (O & G) conducted a investigation of the soil and groundwater associated with former Building FF, which had been demolished in 1992. A report detailing this investigation was submitted in July 1993. This report indicates that the subsurface soil and groundwater in the vicinity of former Building FF have been impacted by VOCs. In August 1993, O & G submitted a RFI Phase II Work Plan to address data gaps that remained following the initial RFI efforts.

2.2 Objectives

The purpose of the oversight performed by Jacobs was to observe the activities associated with the groundwater sampling at the facility, and to obtain split samples of each groundwater sample collected by the facility. Oversight of field activities was performed to document Monsanto's compliance, along with that of its contractor, G & M, with approved procedures in the RFI Phase II Work Plan. Split samples were obtained and analyzed to check the accuracy of Monsanto's sample preservation, management, and laboratory analysis, as performed by Savannah Laboratories of Savannah, Georgia. Subcontract work on the Geoprobe sampling effort, performed by GTI of Mt. Vernon, Illinois, was observed as well. Split samples of Geoprobe groundwater samples were obtained in several cases.

3.0 FIELD ACTIVITIES

3.1 Introduction

During the oversight period (November 8 through November 11, 1993), the Jacobs representative observed groundwater sampling throughout the site, which was implemented in order to better define the site groundwater quality and the nature and extent of constituents of interest. This work was necessitated as a result of data gaps that remained following the initial RFI efforts. Refer to Attachment A for Photographs, Attachment B for Field Log Notes, and Attachment C for Chain of Custody/Field Sheets.

The Jacobs representative arrived at the site on November 8, 1993 and proceeded directly to the reception area, where the Monsanto and G & M representatives met him. A safety briefing was conducted for the benefit of all nonplant personnel (Monsanto, G & M, and Jacobs). Following this safety briefing and initial container and equipment preparation, sampling personnel proceeded to the Lasso™ area, where well purging and groundwater sampling activities were initiated. Fifteen (15) wells were purged and sampled during the Jacobs presence at the site. In addition, eleven (11) Geoprobe groundwater samples were collected during this period.

Site personnel, their affiliation, and time on-site (as it relates to the events described herein) during the period of oversight by Jacobs are as follows:

Name	Organization	Date
Jo Hanson	Monsanto	November 8-10, 1993
Rich Koenig	Monsanto	November 8-10, 1993
Deonne Milleson	Monsanto	November 8-10, 1993
Laurie Musiker	G & M	November 8-10, 1993
Russ Schlukebir	G & M	November 8-11, 1993
John Upcraft	GTI	November 9-10, 1993
Mike Chenoweth	GTI	November 9-10, 1993
Brian Barrett	GTI	November 10, 1993
Brett Bersche	GTI	November 10, 1993
Bill Gresham	Jacobs	November 8-11, 1993

3.2 General Site Conditions and Observations

Weather conditions during the oversight period were clear to partly sunny and cool, with morning temperatures starting at about 40°F and afternoon highs reaching approximately 65°F. No precipitation fell during the period, and ground conditions were dry.

3.3 Oversight of Geoprobe Work

The following is a description of the way in which the Geoprobe work was performed. Following set-up of one of GTI's Geoprobe vans (Ford cargo vans outfitted with hydraulic drive mechanisms at the rear) at a given location, a sealed stainless steel well screen was driven into the water table. The well screen, 24 inches in length, was then opened to the zone of interest, and a water sample was obtained via a sample collection tubing system. The flexible tubing was connected to a peristaltic pump which was used to pump the groundwater to the surface.

Original plans called for six (6) Geoprobe sampling locations around MW-13, three (3) locations east of Kosciusko Street (GM-1A, GM-1B, and GM-1C), and three (3) in the vicinity of MW-20 (Figure 2). Of these, groundwater samples were actually collected at ten (10) locations (MW-13A, MW-13B, MW-13C, MW-13D, MW-13E, MW-13F, MW-20B, GM-1A, GM-1B, and GM-1C). Very low recharge rates prevented the collection of groundwater at one (1) of the original locations, MW-20A. Geoprobe work at another of the original locations, MW-20C, was not attempted due to very low recharge rates at MW-20A and MW-20B and utility clearance problems. Split samples were obtained for EPA at MW-13A, MW-13B, MW-13C, MW-13F, and MW-20B. Each of the holes left following removal of the Geoprobe screen assemblies was abandoned by filling with granular bentonite.

3.4 Field Measurements

During groundwater sampling activities, field measurements were performed to obtain static water levels and field parameters from samples. A Keck ET-89 water level indicator with a stainless steel probe and a lead of teflon with graduations (in tenths of a foot) was utilized in measuring static water level values. Field parameters were measured with a Cambridge Scientific pH/conductivity meter and a mercury thermometer. It was discovered during sampling activities that the conductivity probe was not in working order, so conductivity measurements were not made. The pH probe was calibrated prior to use each day with pH 4 standard buffer solution.

Health and safety monitoring was performed through the use of a HNu photoionization detector with a 10.2 electron-volt (eV) lamp. This measurement was made every time a well was opened. The HNu was calibrated with 100 parts per million (ppm) isobutylene gas at the start of each sampling day, and background was set at zero.

3.5 Sampling Activities

Performance of groundwater sampling by G & M personnel was observed during the period of Jacobs oversight. Purging and groundwater sampling were completed for wells GM-1, GM-3, GM-5, MW-4, MW-5, MW-11B, MW-14, QS-1, MW-3, MW-8A, OBS-1, VW-2, MW-13, MW-15, and MW-20. In addition, groundwater samples were collected at Geoprobe locations MW-13A, MW-13B, MW-13C, MW-13D, MW-13E, MW-13F, MW-20B, GM-1A, GM-1B, and GM-1C. Split samples were obtained for EPA at each of these locations, with the exception of Geoprobe locations MW-13D, MW-13E, GM-1A, GM-1B, and GM-1C, due to low recharge.

Groundwater was purged from wells GM-5, GM-3, MW-14, MW-20, and MW-15 using a Masterflex Model 7570-10 (Cole-Parmer) peristaltic pump. Flexible tubing (similar to Tygon tubing) was used with this pump. A four-inch diameter Grundfos stainless steel submersible pump was used for purging at wells QS-1 and OBS-1. This submersible pump was secured with steel safety cable, as well as its power lead and one-inch plastic tubing. The submersible pump was used in conjunction with a Honda EB5000X gasoline-powered generator. A three-foot long by one and one-half-inch diameter teflon top-filling bailer was utilized for purging at well VW-2. A dedicated PVC bailer was used for purging at MW-5. Disposable high-density polyethylene (HDPE) bailers were utilized at all other wells. Each of these was dedicated and disposed following completion of sampling. Nylon rope, one-quarter-inch in diameter, was used to raise and lower the bailers. At MW-11B, the top of one of the disposable bailers broke while the bailer was in the well. This bailer was lost, and attempts to recover it were unsuccessful. It apparently sank to the bottom of the well, where it did not interfere with further bailing associated with purging and sampling activities. No purging was performed at the Geoprobe locations. Wells GM-1, GM-2, GM-3, GM-4,

GM-5, and MW-14 were inspected for presence of dense NAPLs (DNAPL). This was accomplished through the use of a peristaltic pump, the intake tube of which had been lowered to the bottom of each well. The flexible tubing was unweighted. No DNAPLs were observed.

Sampling of wells was performed using the HDPE disposable bailers with the following exceptions: wells GM-5, MW-13, GM-1, GM-3, MW-14 (initially), MW-15, and MW-20 were sampled with the peristaltic pump, as were all Geoprobe locations; well MW-5 was sampled using a dedicated PVC bailer; and the teflon top-filling bailer was utilized for sample collection at VW-2 and the second sampling of MW-14. The reason for two (2) sampling efforts at MW-14 is that, following notification that this well contained light NAPL (LNAPL), EPA requested an effort be made to collect a sample of this floating product.

Table 1 details sample containers and preservation used for samples from each well and for Monsanto vs. EPA. All sample containers were filled to near capacity. Each forty (40)-milliliter (ml) vial for VOC analysis was filled completely, to ensure that no bubbles would result in headspace within the container. The samples were placed into coolers with ice for preservation. Following proper chain-of-custody procedures, the coolers designated to go to Savannah Laboratories were shipped via Federal Express overnight service to ensure receipt and analysis within the prescribed holding times. Split samples obtained by Jacobs were packaged following standard sample-handling protocols and conveyed to the U.S. EPA Region VII Laboratories in Kansas City, Kansas. Those sample collection activities observed were performed generally in compliance with the G & M RFI Phase II Work Plan for the J.F. Queeny Site, Monsanto Company, St. Louis, Missouri, dated August 1993, except as noted below.

3.6 Daily Activities and Major Accomplishments

November 8, 1993

The Jacobs representative arrived at the site. G & M and Monsanto personnel were already present. Performance of groundwater sampling commenced, with GM-5 purged and sampled. A split sample was obtained at this location for EPA.

November 9, 1993

GTI personnel mobilized to the site and commenced Geoprobe activities. Groundwater purging and sampling were performed at QS-1, MW-11B, MW-13, GM-3, MW-5, GM-1, MW-14, and MW-4. Geoprobe groundwater sampling was performed at MW-13A, MW-13B, and MW-13C. Split samples were obtained at each of these locations for EPA. At Geoprobe locations MW-13D, MW-13E, and MW-13F, the Geoprobe was driven to the appropriate depth, but, due to slow recharge, samples were not collected. A trip blank sample was prepared for the EPA samples.

November 10, 1993

Groundwater purging and sampling were performed at MW-3, OBS-1, MW-15, MW-20, MW-8A, MW-20B, and VW-2. Geoprobe sampling was performed at MW-13D, MW-13E, and MW-13F; GM-1A, GM-1B, and GM-1C. Split samples were obtained for EPA at all locations except MW-13D, MW-13E, GM-1A, GM-1B, and GM-1C, where recharge was very slow and sample volume was too small to allow for split samples. Trip blank samples were prepared for the EPA samples. All GTI personnel, all Monsanto personnel, and one (1) G & M representative demobilized from the site.

November 11, 1993

The top-filling bailer utilized on November 10 was used for a rinsate blank sample (following careful decontamination), then employed for upper-zone sampling at MW-14. Following sample-prep activities, the G & M and Jacobs representatives demobilized from the site.

4.0 SAMPLE HANDLING, CUSTODY, AND DOCUMENTATION PROCEDURES

Preservation, sample handling, and documentation of the groundwater samples collected by G & M personnel during the presence of the Jacobs representative were performed in accordance with standard accepted procedures and with those procedures set forth in the RFI Phase II Work Plan submitted by Monsanto in August, 1993. Standard procedures were used to preserve, manage, and convey samples obtained by the Jacobs representative on behalf of EPA as well. Each sample was assigned a unique number for tracking and identification. Chain of custody protocols were followed by both parties. Table 1 provides a comparison of the containers and preservation of samples practiced for Monsanto and EPA samples.

5.0 SITE SAFETY

Activities performed by Monsanto, G & M, and GTI were governed by company-specific Health and Safety Plans. The Jacobs representative adhered to the Jacobs Health and Safety Plan. Modified level D personal protective equipment (PPE) was utilized by all on-site personnel. This consisted of disposable gloves, steel-toed boots, safety glasses, hard hats, and street clothes. Tyvek coveralls were worn by bailing personnel at MW-11B, MW-13, MW-5, MW-3, and MW-8A to prevent contamination through splashing or contact with the bailer and rope.

6.0 DECONTAMINATION PROCEDURES

6.1 Equipment Decontamination

6.1.1 Geoprobe Equipment

The rods utilized in Geoprobe advancement were decontaminated by GTI personnel at the conclusion of each workday by steam-cleaning at GTI's decontamination facility located at its Mt. Vernon, Illinois office. The high-pressure wash was enhanced through the use of Liquinox™ nonphosphate soap. Following a tap water rinse, each rod was again rinsed with de-ionized water.

6.1.2 Other Equipment

The water level indicator, field parameter equipment, and sampling equipment were decontaminated prior to and/or following each use with a wash in a solution of Alconox™ in potable water followed by a distilled water rinse. Sampling equipment requiring decontamination included the top-filling bailer and the submersible pump. The submersible pump was allowed to run in such a solution, then in distilled water, to allow for internal decontamination.

6.2 Personnel Decontamination

Personnel decontamination consisted of washing hands following removal of disposable vinyl and nitrile gloves used when potentially contaminated material was encountered.

7.0 RESIDUALS MANAGEMENT

All groundwater produced during well purging was containerized. This water was either first placed in plastic buckets, followed by transfer to 55-gallon steel drums, or placed directly into such drums, for on-site storage. Fluids generated through equipment decontamination were handled in the same manner. Following analysis of the liquids generated during sampling activities, appropriate disposition will be implemented. Filtration of these liquids may be necessary prior to any discharge or other disposal.

Solid investigation-derived waste (IDW), such as used PPE, was bagged and left on-site for disposal as outlined in the approved RFI Phase II Work Plan. The solid IDW generated by the Jacobs representative was combined with that generated by Monsanto, G & M, and GTI personnel.

8.0 DEVIATIONS FROM APPROVED PLANS

Few deviations from the procedures outlined in the approved RFI Phase II Work Plan were noted by the Jacobs representative during oversight activities. Exceptions are noted below.

It is possible that G & M representatives were unsuccessful in their attempts to collect LNAPL samples at VW-2 and MW-14 through incorrect sampling technique. The top-filling bailer was lowered into the top of the water column, as requested by Randy Rohrman of EPA. As this is performed, it is critical that, if the LNAPL layer is thin, the bailer be lowered just into, not through, the floating layer. Pure phase LNAPL samples were not obtained, although floating product was observed in the purged water. It is possible that the bailer was lowered through a thin floating layer, negating the successful capture of LNAPL.

While sampling at MW-13 was performed with the peristaltic pump, purging of this well was performed utilizing a disposable HDPE bailer. The RFI Phase II Work Plan indicated that evacuation of MW-13 would be accomplished with a peristaltic pump at a very low pumping rate.

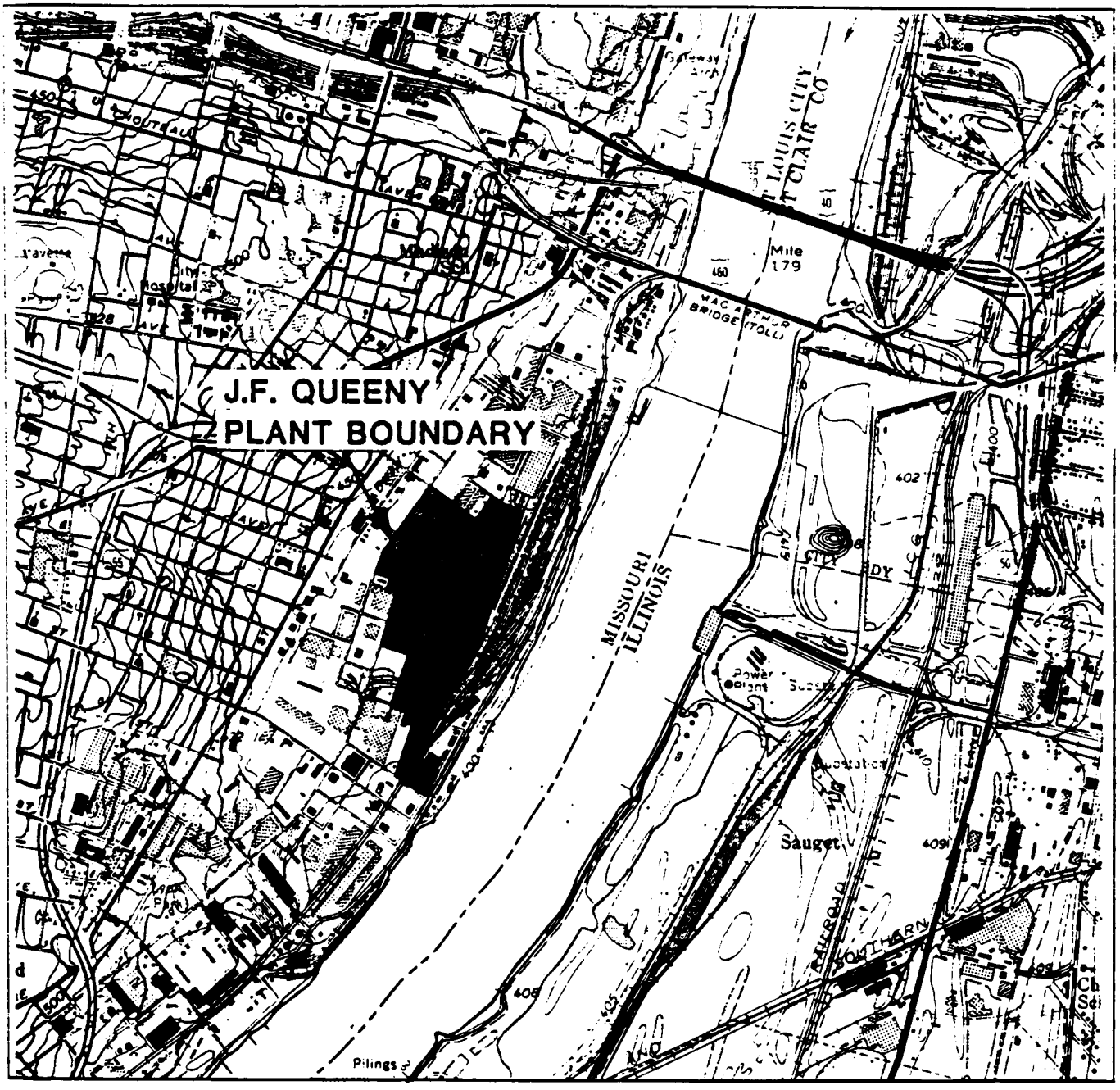
9.0 SUMMARY AND CONCLUSIONS

Jacobs maintained a site presence at Monsanto during the period November 8 through November 11, 1993. While on-site, the Jacobs representative performed oversight of groundwater sampling activities, including purging and sampling at GM-1, GM-3, GM-5, MW-4, MW-5, MW-11B, MW-14, QS-1, MW-3, MW-8A, OBS-1, VW-2, MW-13, MW-15, and MW-20, and Geoprobe sampling at MW-13A, MW-13B, MW-13C, MW-13D, MW-13E, MW-13F, MW-20B, GM-1A, GM-1B, and GM-1C. Other activities observed included inspection of wells MW-14, GM-1, GM-2, GM-3, GM-4, and GM-5 for DNAPLs.

It was noted that dedicated bailers at several wells (GM-4, GM-5, MW-5, and MW-14, for example) hung into the water columns within their respective wells. This practice should be stopped, as it prevents totally accurate assessments of static water level and NAPL presence. It was also noted that detection of NAPLs would have been easier and more accurate had an interface probe been employed.

It is Jacobs conclusion that the work performed by Monsanto, G & M, and GTI personnel during this period generally conformed with the procedures outlined in applicable site guidance, except as noted above.

FIGURES



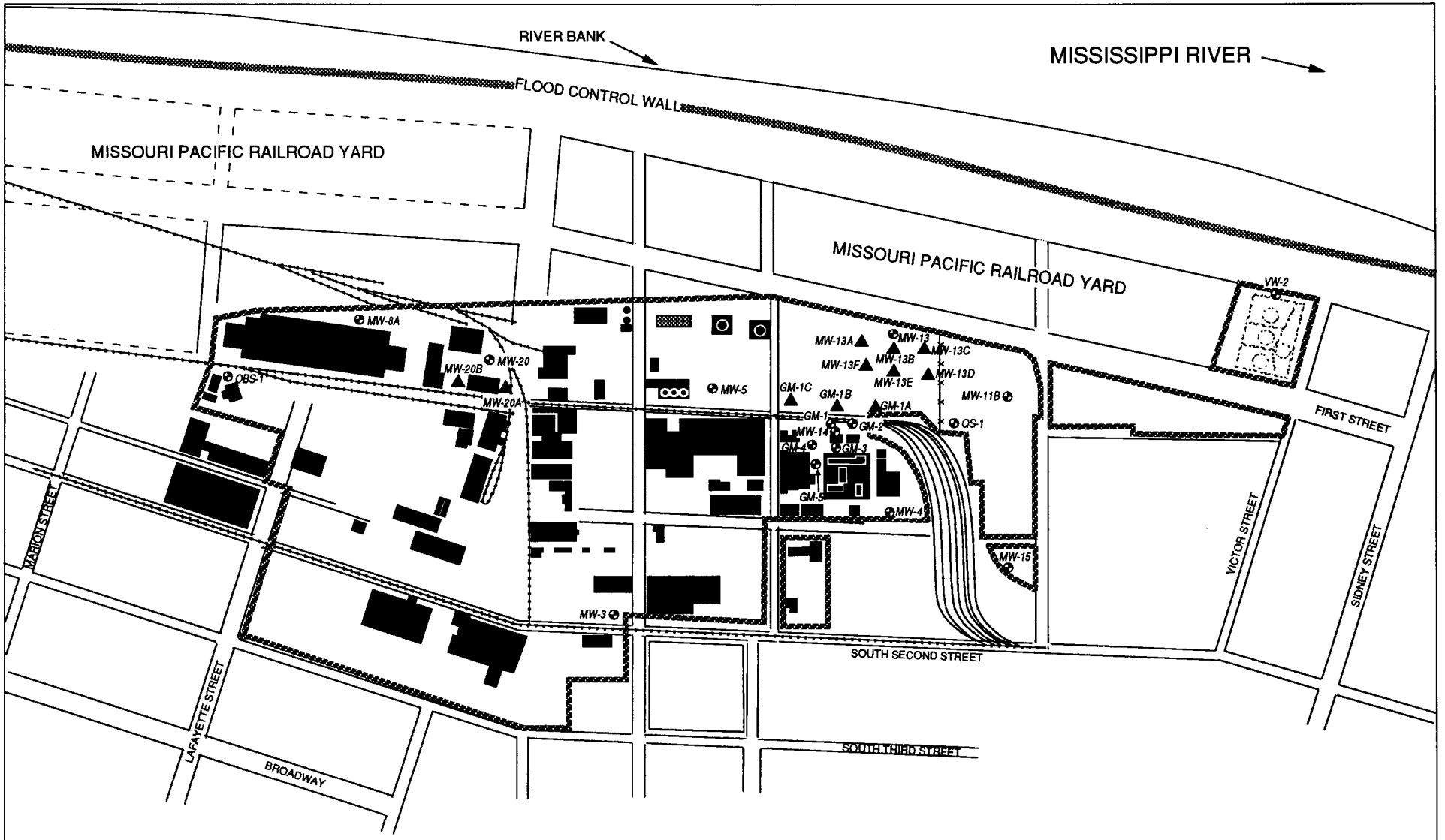
Source: U.S.G.S. Topographic Map

0 .5 1

Approximate Scale in Miles

FIGURE DESCRIPTION: SITE LOCATION MAP	
SITE NAME/LOCATION: MONSANTO -J.F. QUEENY PLANT, ST. LOUIS, MISSOURI	JACOBS PROJECT NO: 13-E082-00
JACOBS ENGINEERING GROUP INC.	TES X
DRAWN BY: MD DATE: 11/23/93	FIGURE NO. 1
CHECKED BY: BJ DATE: 11/23/93	

E082-00-002



LEGEND

- SITE BOUNDARY
- MONITORING WELL OR OBSERVATION WELL
- GEOPROBE SAMPLING LOCATION

NOT TO SCALE

FIGURE DESCRIPTION: GROUNDWATER SAMPLING LOCATIONS	WORK ASSIGNMENT NO R07047
SITE NAME MONSANTO - J.F. QUEENY PLANT ST. LOUIS, MISSOURI	JACOBS PROJECT NO 13-E082-00
JACOBS ENGINEERING GROUP INC.	TES X
DRAWN BY: MD DATE: 11/23/93	FIGURE NO. 2
CHECKED BY: BG DATE: 11/23/93	

E082-00-001

TABLES

TABLE 1
SAMPLE SUMMARY

Sample Location	Monsanto Sample No.	EPA Sample No.	Monsanto Parameters	Monsanto Containers	Monsanto Preservation	EPA Parameters	EPA Containers	EPA Preservation
GM-5	GM-5	ARD41-001	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
QS-1	QS-1	ARD41-002	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
MW-11B	MW-11B	ARD41-003	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
MW-13B	MW-13B	ARD41-014	Semivolatiles	2 x 1L amber glass	cool	Semivolatiles	1 x 80 oz. amber glass	cool
MW-13	MW-13	ARD41-011	LDL VOCs	4 x 40 ml glass	HCL, cool	LDL VOCs	4 x 40 ml amber glass	HCl, cool
			Semivolatiles	2 x 1L amber glass	cool	Semivolatiles	1 x 80 oz. amber glass	cool
			Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
			Total Metals	1 x 500 ml HDPE	HNO3, cool	Total Metals	1 x 1L HDPE	HNO3, cool
	MW-13 MS/MSD	ARD41-012	-----	-----	-----	LDL VOCs	4 x 40 ml glass	HCl, cool
			Semivolatiles	2 x 1L amber glass	cool	Semivolatiles	1 x 80 oz. amber glass	cool
			-----	----	-----	Alachlor	1 x 80 oz. amber glass	cool
			Total Metals	1 x 500 ml HDPE	HNO3, cool	Total Metals	1 x 1L HDPE	HNO3, cool
MW-13C	MW-13C	ARD41-015	Semivolatiles	2 x 1L amber glass	cool	Semivolatiles	1 x 80 oz. amber glass	cool
GM-3	GM-3	ARD41-004	Alachlor	2 X 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
MW-5	MW-5	ARD41-006	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
GM-1	GM-1	ARD41-005	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
MW-14	MW-14	ARD41-007	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
	-----	ARD41-025	-----	1 x 4 oz. glass	cool	VOCs	2 x 40 ml glass	HCl, cool
	-----	ARD41-036	-----	1 x 4 oz. glass	cool	LDL VOCs	4 x 40 ml glass	HCl, cool
MW-4	MW-4	ARD41-009	Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
MW-13A	MW-13A	ARD41-019	Semivolatiles	2 x 1L amber glass	cool	Semivolatiles	1 x 80 oz. amber glass	cool
	-----	ARD41-020	-----	-----	-----	Semivolatiles	1 x 80 oz. amber glass	cool
MW-3	MW-3	ARD41-010	LDL VOCs	4 x 40 ml glass	HCl, cool	LDL VOCs	4 x 40 ml glass	HCl, cool
			Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
MW-13D	MW-13D	-----	Semivolatiles	2 x 1L amber glass	cool	-----	-----	-----
MW-13E	MW-13E	-----	Semivolatiles	2 x 1L amber glass	cool	-----	-----	-----
OBS-1	OBS-1	ARD41-029	LDL VOCs	4 x 40 ml glass	HCl, cool	LDL VOCs	4 x 40 ml glass	HCl, cool
	OBS-1 MS/MSD	-----	LDL VOCs	8 x 40 ml glass	HCl, cool	-----	-----	-----
MW-13F	MW-13F	ARD41-018	Semivolatiles	2 x 1L amber glass	cool	Semivolatiles	1 x 80 oz. amber glass	cool
MW-20	MW-20	ARD41-027	Total Metals	1 x 500 ml HDPE	HN03, cool	Total Metals	1 x 1L HDPE	HNO3, cool
			Cyanide	1 x 500 ml HDPE	NaOH, cool	Cyanide	1 x 1L HDPE	NaOH, cool
	MW-20 MS/MSD	ARD41-028	Total Metals	2 x 500 ml HDPE	HNO3, cool	Total Metals	1 x 1L HDPE	HNO3, cool
			Cyanide	2 x 500 ml HDPE	NaOH, cool	Cyanide	1 x 1L HDPE	NaOH, cool
MW-8A	MW-8A	ARD41-030	LDL VOCs	4 x 40 ml glass	HCl, cool	LDL VOCs	4 x 40 ml glass	HCl, cool
	-----	ARD41-031	-----	-----	-----	LDL VOCs	4 x 40 ml glass	HCl, cool
GM-1A	GM-1A	-----	Alachlor	2 x 1L amber glass	cool	-----	-----	-----
GM-1B	GM-1B	-----	Alachlor	2 x 1L amber glass	cool	-----	-----	-----
GM-1C	GM-1C	-----	Alachlor	2 x 1L amber glass	cool	-----	-----	-----
MW-20B	MW-20B	ARD41-023	Cyanide	1 x 500 ml HDPE	NaOH, cool	Cyanide	1 x 1L HDPE	NaOH, cool
MW-15	MW-15	ARD41-021	Total Metals	1 x 500 ml HDPE	HNO3, cool	Total Metals	1 x 1L HDPE	HNO3, cool
			Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
	MW-15 MS/MSD	-----	Alachlor	4 x 1L amber glass	cool	-----	-----	-----
VW-2	-----	ARD41-026	-----	1 x 4 oz. glass	cool	VOCs	2 x 40 ml glass	HCl, cool
	VW-2	ARD41-032	LDL VOCs	4 x 40 ml glass	HCl, cool	LDL VOCs	4 x 40 ml glass	HCl, cool
Trip blank	-----	ARD41-033-F	-----	-----	-----	LDL VOCs	4 x 40 ml glass	HCl, cool
Trip blank	-----	ARD41-034-F	-----	-----	-----	LDL VOCs	4 x 40 ml glass	HCl, cool
Trip blank	-----	ARD41-035-F	-----	-----	-----	LDL VOCs	4 x 40 ml glass	HCl, cool
Rinsate blank	Rinsate blank	ARD41-013	-----	-----	-----	LDL VOCs	4 x 40 ml glass	HCl, cool
			-----	-----	-----	Semivolatiles	1 x 80 oz. amber glass	cool
			Alachlor	2 x 1L amber glass	cool	Alachlor	1 x 80 oz. amber glass	cool
			-----	-----	-----	Total Metals	1 x 1L HDPE	HNO3, cool

MS Matrix Spike MSD Matrix Spike Duplicate ---- Not Collected

ATTACHMENTS

ATTACHMENT A

Photographs

SITE NAME: Monsanto J.F. Queeny Plant

Subject: Measuring static water level
Location: GM-5

PHOTOGRAPH NO. 1

Date: November 8, 1993
Time: 1535
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Down

Subject: Measuring static water level
Location: GM-2

PHOTOGRAPH NO. 2

Date: November 8, 1993
Time: 1555
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: South

SITE NAME: Monsanto J.F. Queeny Plant

Subject: Checking field parameters
Location: GM-5

PHOTOGRAPH NO. 3

Date: November 8, 1993
Time: 1650
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southwest

Subject: Sample collection
Location: GM-5

PHOTOGRAPH NO. 4

Date: November 8, 1993
Time: 1705
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southwest

SITE NAME: Monsanto J.F. Oueenv Plant

Subject: Installing submersible pump
Location: QS-1

PHOTOGRAPH NO. 5

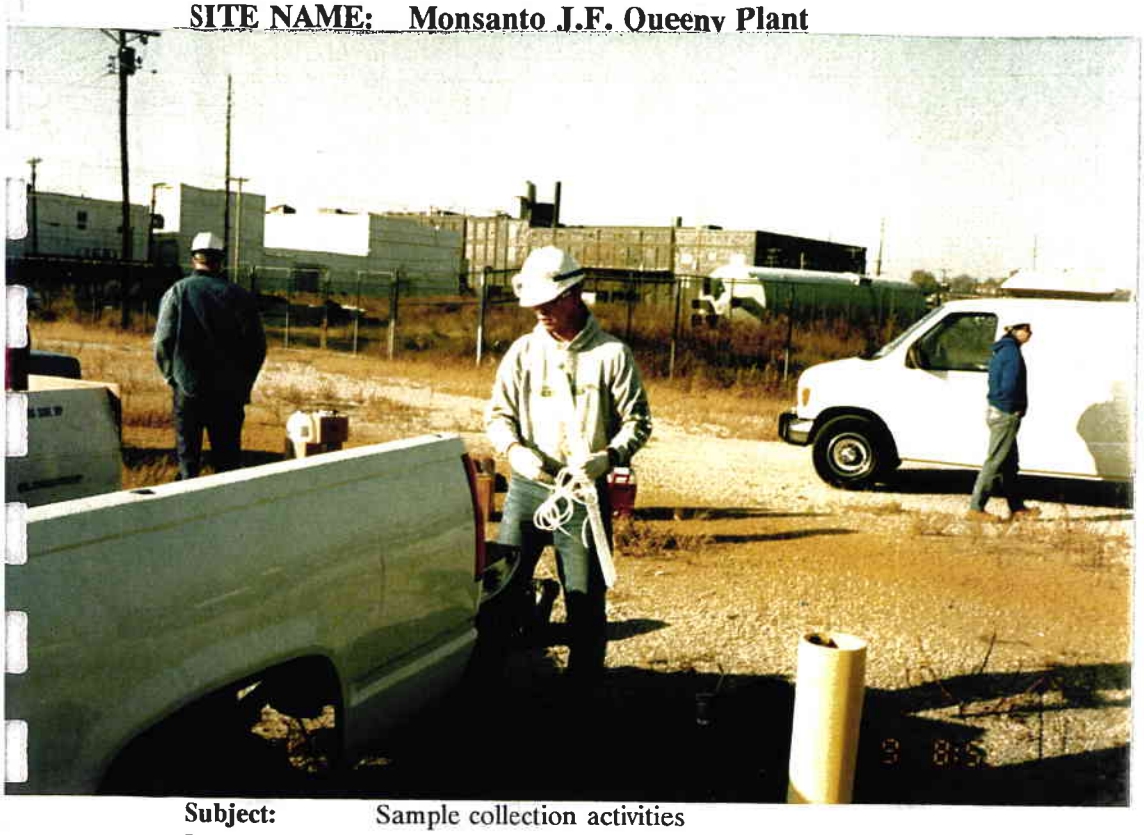
Date: November 9, 1993
Time: 0735
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: West

Subject: Pumping groundwater
Location: QS-1

PHOTOGRAPH NO. 6

Date: November 9, 1993
Time: 0750
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southeast

SITE NAME: Monsanto J.F. Queeny Plant



PHOTOGRAPH NO. 7

Date: November 9, 1993
Time: 0850
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southwest

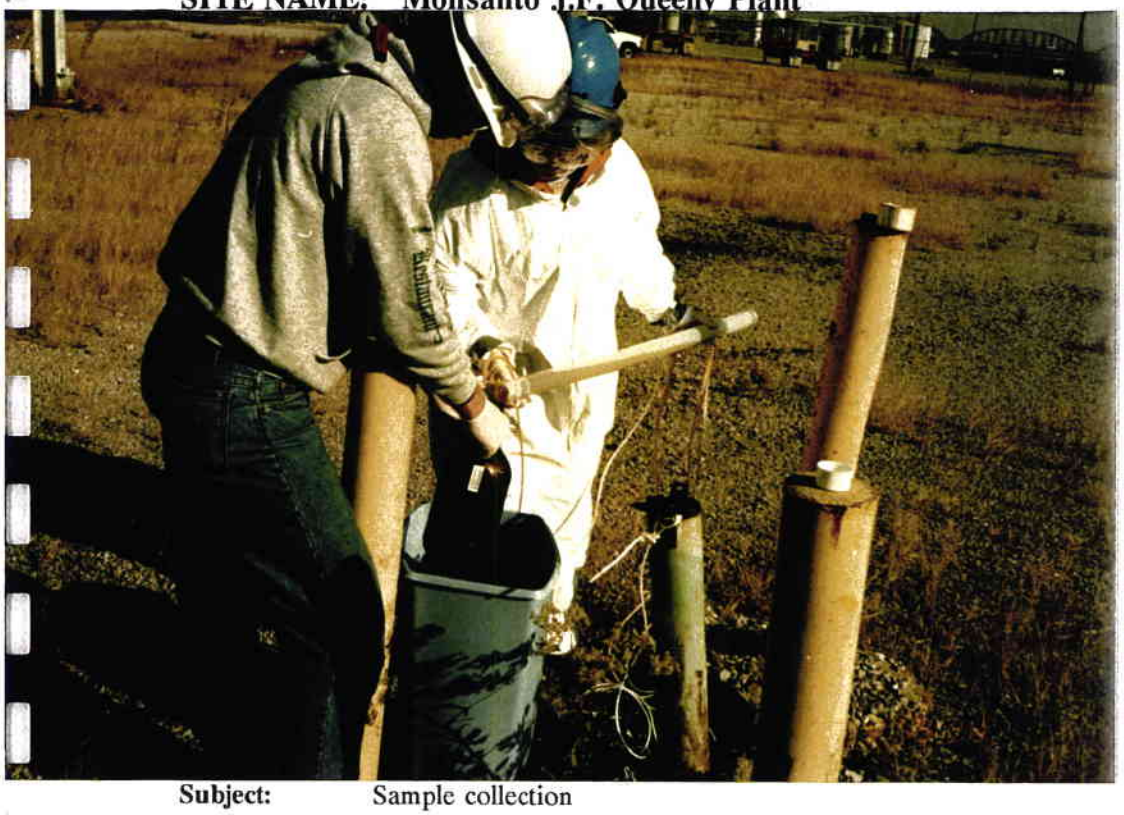
Subject: Sample collection activities
Location: QS-1

PHOTOGRAPH NO. 8

Date: November 9, 1993
Time: 0855
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: North

Subject: Purging groundwater
Location: MW-11B

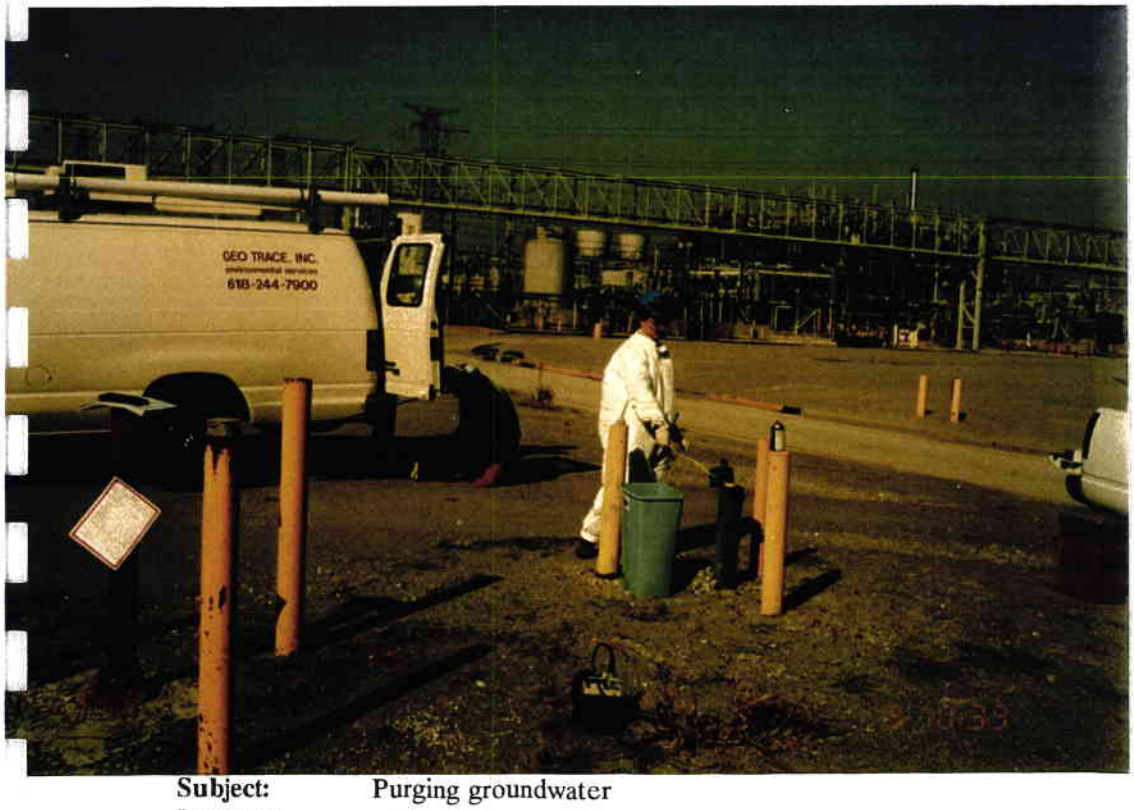
SITE NAME: Monsanto J.F. Queeny Plant



Subject: Sample collection
Location: MW-11B

PHOTOGRAPH NO. 9

Date: November 9, 1993
Time: 0930
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: North



Subject: Purging groundwater
Location: MW-13

PHOTOGRAPH NO. 10

Date: November 9, 1993
Time: 1040
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northwest

SITE NAME: Monsanto J.F. Queeny Plant

Subject: Geoprobe activities
Location: MW-13C

PHOTOGRAPH NO. 11

Date: November 9, 1993
Time: 1215
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southwest

Subject: Geoprobe sampling
Location: MW-13D

PHOTOGRAPH NO. 12

Date: November 9, 1993
Time: 1355
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: North

SITE NAME: Monsanto J.F. Queeny Plant

Subject: Slight sheen on purge water
Location: GM-3

PHOTOGRAPH NO. 13

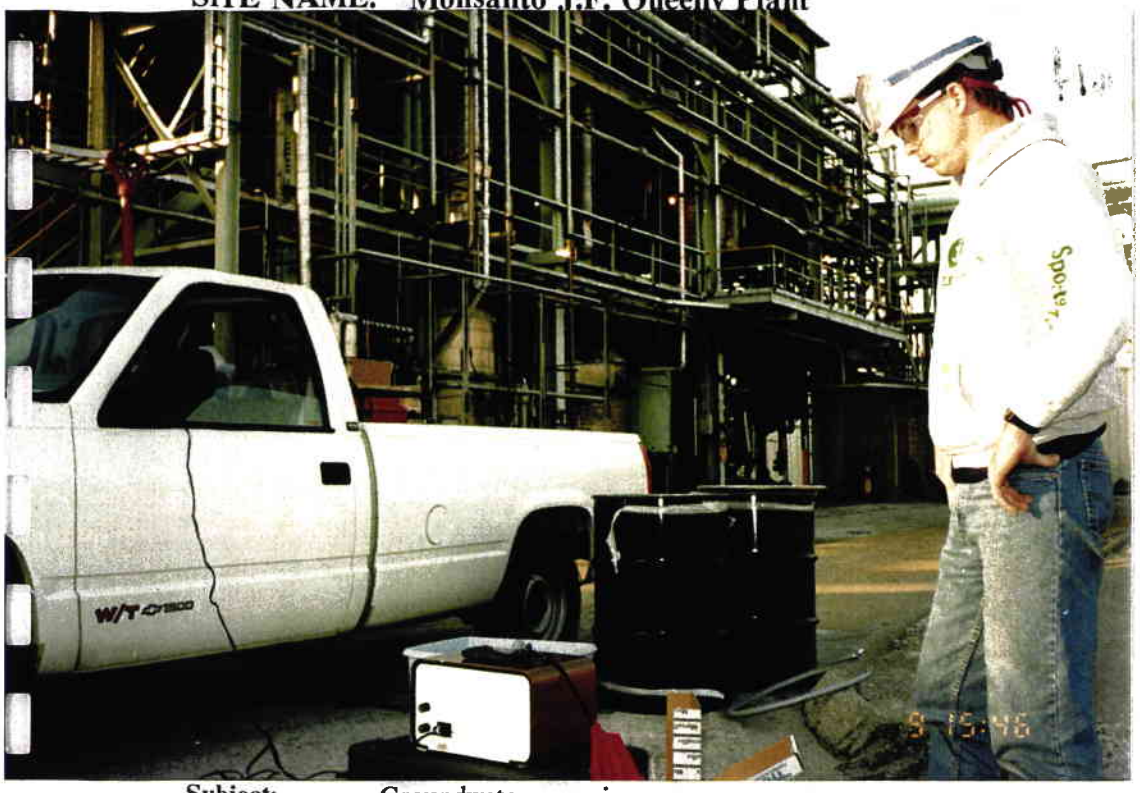
Date: November 9, 1993
Time: 1510
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Down

Subject: Groundwater sampling
Location: GM-3

PHOTOGRAPH NO. 14

Date: November 9, 1993
Time: 1515
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southwest

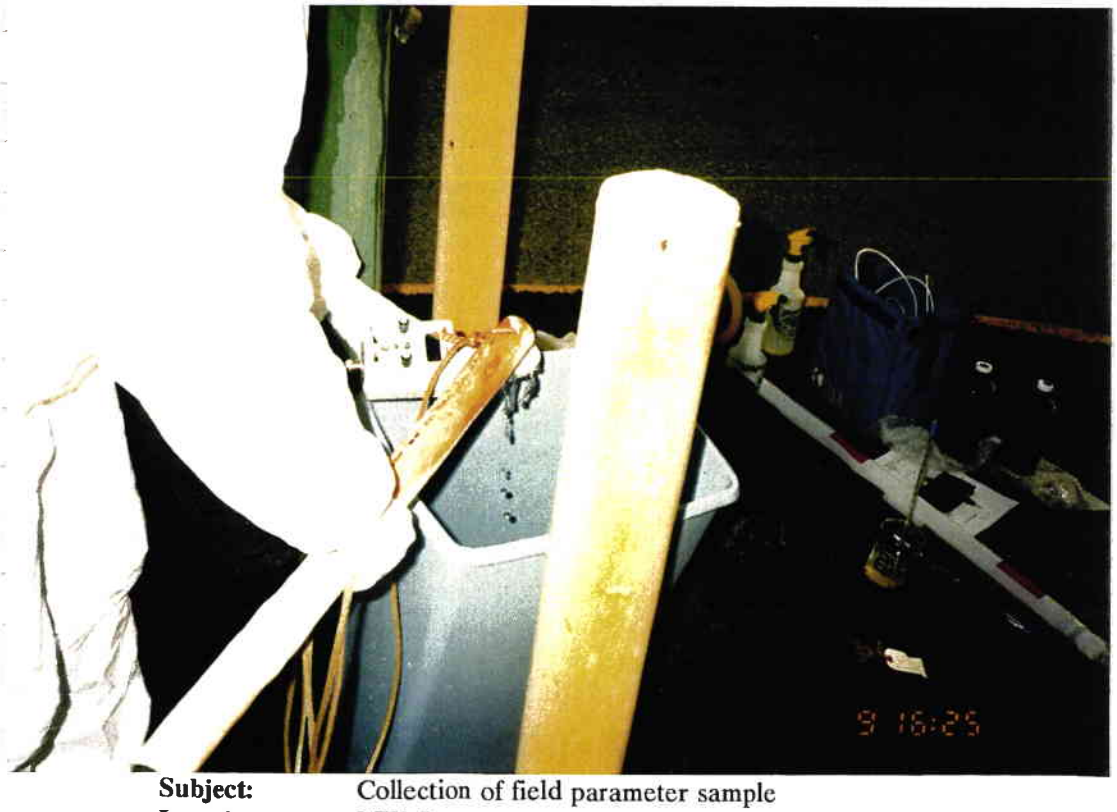
SITE NAME: Monsanto J.F. Queeny Plant



Subject: Groundwater pumping
Location: GM-4

PHOTOGRAPH NO. 15

Date: November 9, 1993
Time: 1550
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northwest

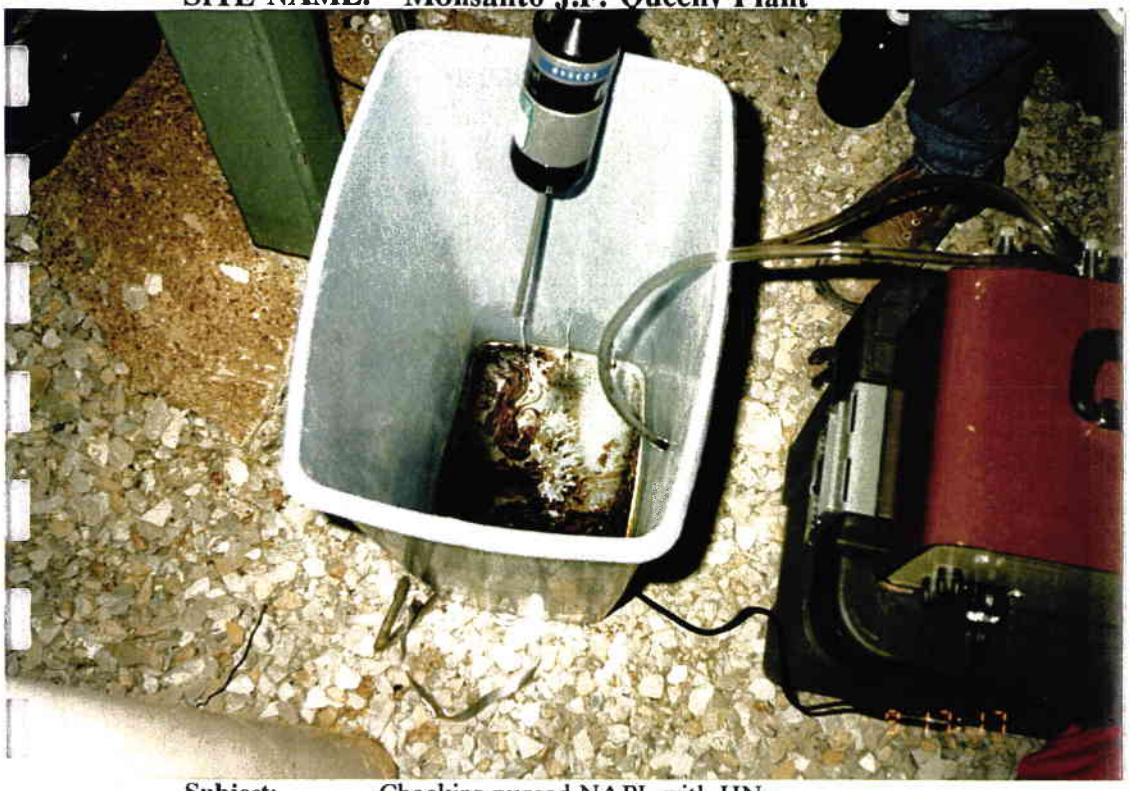


Subject: Collection of field parameter sample
Location: MW-5

PHOTOGRAPH NO. 16

Date: November 9, 1993
Time: 1625
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southeast

SITE NAME: Monsanto J.F. Queeny Plant



Subject: Checking purged NAPL with HNu
Location: MW-14

PHOTOGRAPH NO. 17

Date: November 9, 1993
Time: 1725
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Down

Subject: Geoprobe activities
Location: MW-13E

PHOTOGRAPH NO. 18

Date: November 10, 1993
Time: 0810
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northeast

SITE NAME: Monsanto J.F. Queeny Plant

Subject: Sampling activities
Location: MW-3

PHOTOGRAPH NO. 19

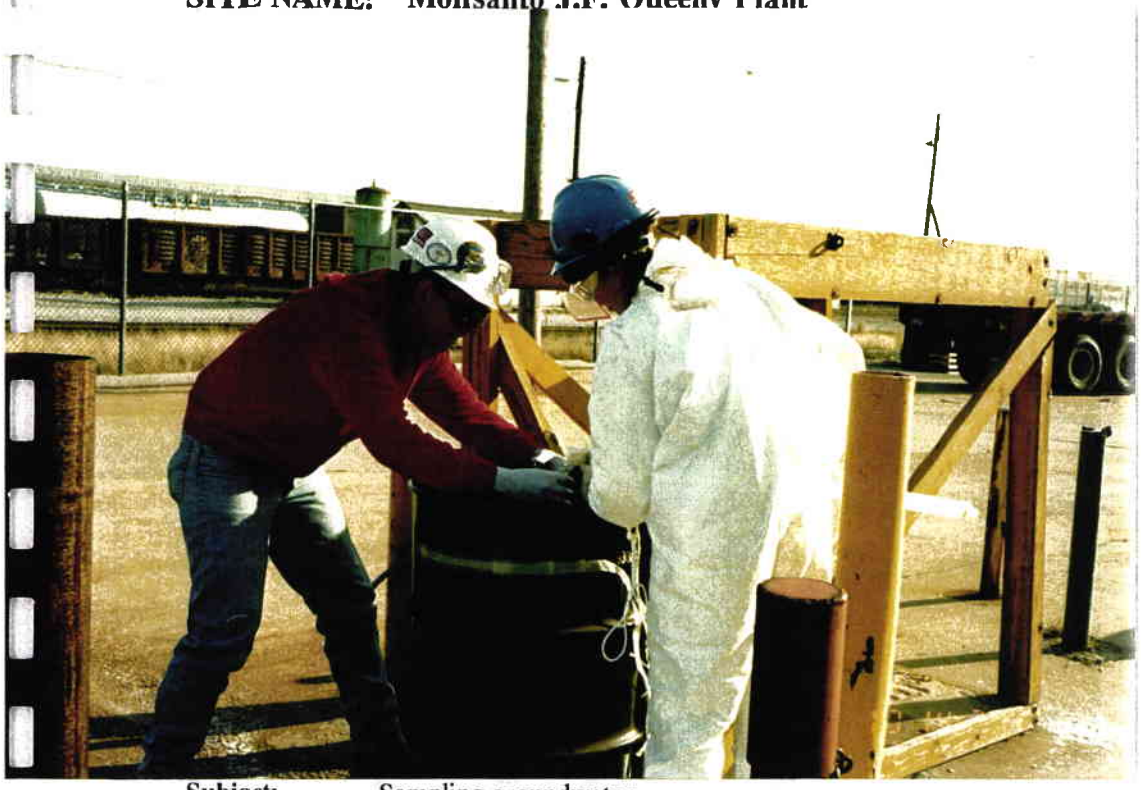
Date: November 10, 1993
Time: 0850
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northwest

Subject: Sampling groundwater
Location: OBS-1

PHOTOGRAPH NO. 20

Date: November 10, 1993
Time: 1000
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northeast

SITE NAME: Monsanto J.F. Queeny Plant



Subject: Sampling groundwater
Location: MW-8A

PHOTOGRAPH NO. 21

Date: November 10, 1993
Time: 1430
Photographer: Laurie Musiker
Film: 200 ASA
Direction of Photograph: Southeast

Subject: Geoprobe set-up
Location: MW-20A

PHOTOGRAPH NO. 22

Date: November 10, 1993
Time: 1520
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northeast

SITE NAME: Monsanto J.F. Queeny Plant

PHOTOGRAPH NO. 23

Date: November 10, 1993
Time: 1525
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: East

Subject: Hach cyanide analysis
Location: MW-20A

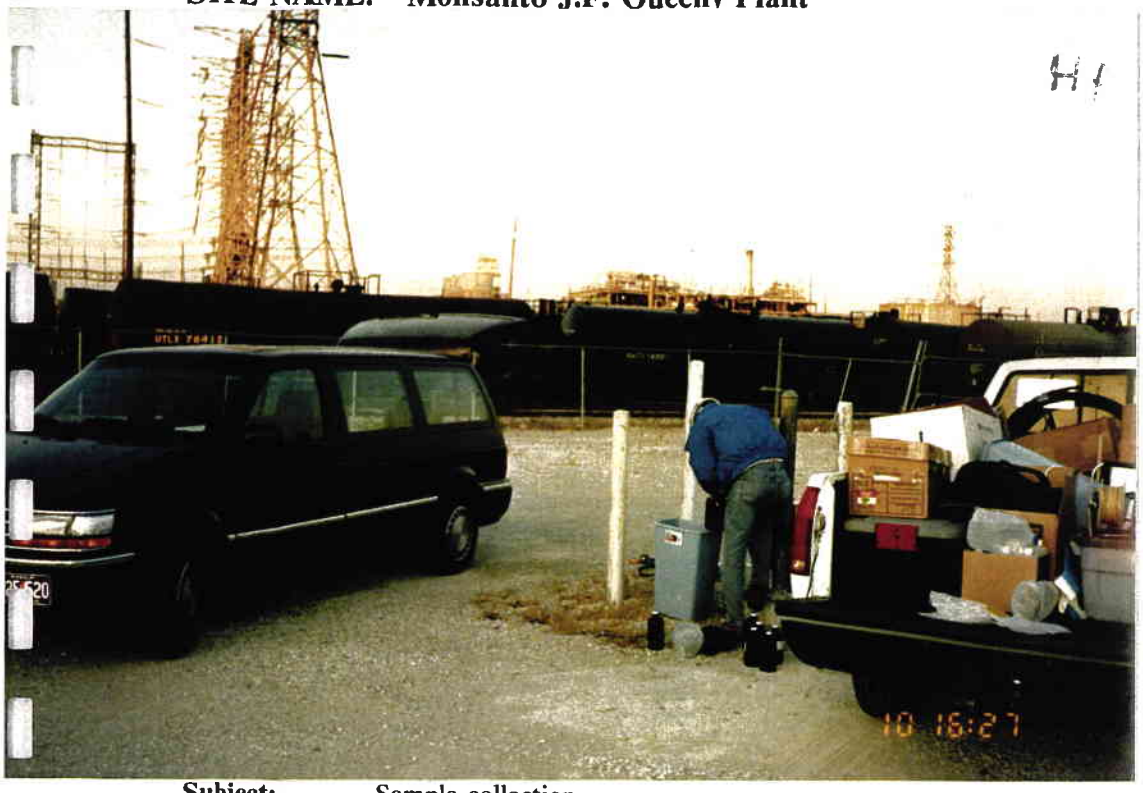
SITE NAME: Monsanto J.F. Queeny Plant

Subject: Purging of groundwater
Location: MW-15

PHOTOGRAPH NO. 24

Date: November 10, 1993
Time: 1615
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Down

SITE NAME: Monsanto J.F. Queeny Plant



Subject: Sample collection
Location: MW-15

PHOTOGRAPH NO. 25

Date: November 10, 1993
Time: 1630
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Northeast

Subject: Sample collection
Location: VW-2

PHOTOGRAPH NO. 26

Date: November 10, 1993
Time: 1830
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southeast

SITE NAME: Monsanto J.F. Queeny Plant

Subject: Removal of dedicated bailer
Location: MW-14

PHOTOGRAPH NO. 27

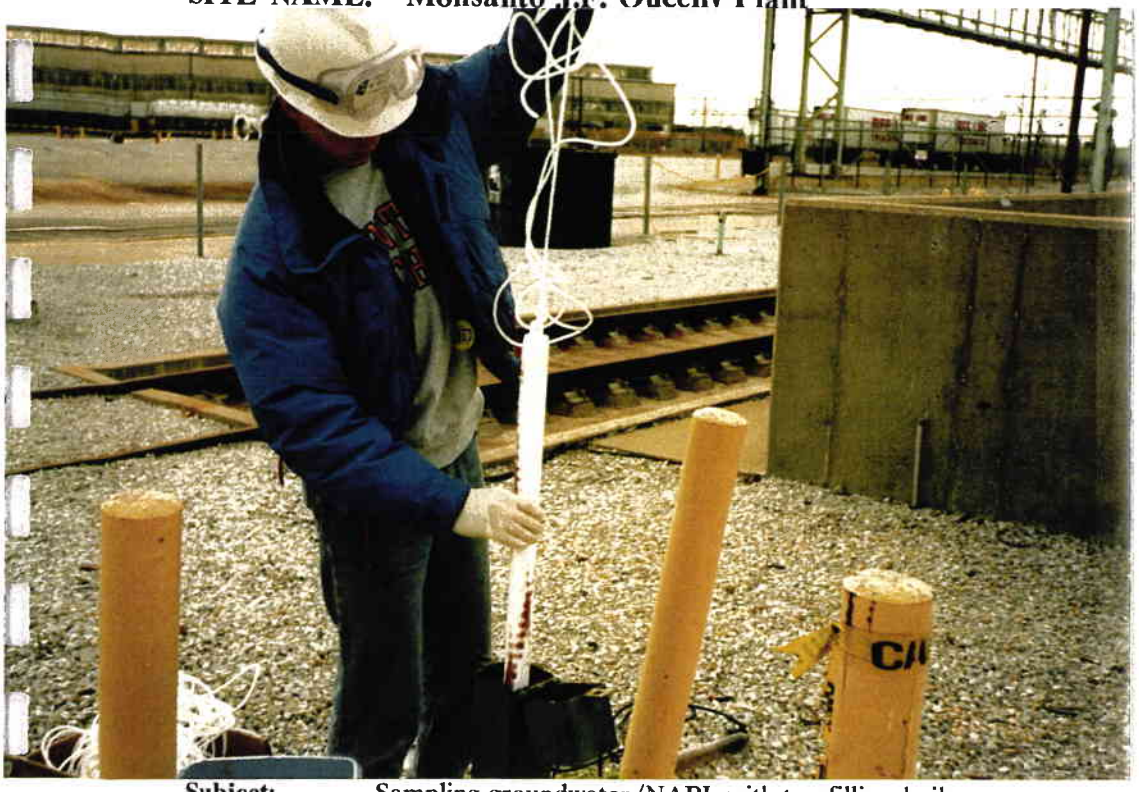
Date: November 11, 1993
Time: 0830
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: West

Subject: Pure product on dedicated bailer
Location: MW-14

PHOTOGRAPH NO. 28

Date: November 11, 1993
Time: 0830
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: West

SITE NAME: Monsanto J.F. Queeny Plant



Subject: Sampling groundwater/NAPL with top-filling bailer
Location: MW-14

PHOTOGRAPH NO. 29

Date: November 11, 1993
Time: 0915
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: Southeast

Subject: Partially decontaminated top-filling bailer
Location: MW-14

PHOTOGRAPH NO. 30

Date: November 11, 1993
Time: 0925
Photographer: Bill Gresham
Film: 200 ASA
Direction of Photograph: South

ATTACHMENT B

Field Log Notes

TIMES

SECTION ①

8 NOVEMBER 1993

The Oversight Manager (OM) Bill Gresham

Weather: Sunny, breezy, warm (55°F) AM; cooling to 45°F late PM

PERSONNEL ON SITE

Name	Title	Company
Jo Hanson	Project Manager	Monsanto
Laurie Musiker	Hydrogeologist	Geraghty & Miller
Russ Schlukebir,	Scientist	"
Deanne Milleson	Intern	Monsanto
Rich Koenig	Environmental Protection Tech.	"

ACTIVITIES PLANNED

Following mobilization to the site, field personnel will attend a health and safety briefing. Staging activities will be initiated. Some sampling or water level measurement may be performed at this time.

SECTION ②

0650 The OM left home to travel to the site.

1150 The OM arrived at the motel.

1210 Following check-in and telephone use at the motel, the OM proceeded to lunch, then the Monsanto J.F. Queeny Plant.

William A. Gresham

CONTINUED TIMES

8 NOVEMBER 1993

1255 The OM proceeded to the guard gate.

1335 Monsanto and Geraghty & Miller personnel arrived at the gate. All proceeded to attend a safety briefing.

1355 Safety briefing complete.

1500 Following container preparation, All personnel proceeded to the Lasso Area. The first well sampled will be GM-5. Water levels are checked with a Keck ET-89 water level indicator.

1525 Well GM-5 has a dedicated teflon bailer in it. This bailer full of water/silt was emptied into a 55-gallon steel drum. GM-3 has no bailer. MW-14 does have a bailer.

1535 Water level at GM-5 = 4.75ft below casing (flush)
PHOTO 1
Measuring the water level at GM-5. View Down.

T.D. at GM-5 = 16.5. Decontamination of the water level indicator performed using a spray of alconox in distilled water followed by a rinse spray of distilled water

1545 Water level at GM-3 = 7.57ft. below top of casing stick-up

1550 Water level at GM-4 = 4.50ft. below top of casing (flush) T.D. = 9.50ft.

William W. Crosby

CONTINUED TIMES

William W. Crosby 8 NOVEMBER 1993

1555 Water level at GM-2 = 9.84ft. below top of casing (stick-up) T.D. = 11.75
PHOTO 2
Measuring water level at GM-2. View South.

Water level at GM-1 = 9.44ft. below top of casing (stick-up)
T.D. = 13.5ft.

1600 Water level at MW-14 = 6.38ft. below top of casing (stick-up). Residue (DNAPL) on probe.
T.D. = 12.0ft.
Proceeded to GM-5. A Masterflex Model 7570-10 (Cole-Parmer) peristaltic pump was readied. Tygon-type tubing was utilized. The tubing lowered to the bottom of the well.

1605 Pumping commenced.

1650 Field parameter sample collected.
PHOTO 3
Checking field parameters at GM-5. View Southwest.

pH	conductivity	temp
6.76	not working	68°F
6.89	"	68°F

Measurements were collected with a Cambridge Scientific pH-Conductivity meter and a Mercury thermometer.

1655 Sample collection (EPA sample ARD41-001, Monsanto sample # GM-5) commenced.

1705 Sample collection at GM-5 complete.

CONTINUED
TIMES

8 NOVEMBER 1993

PHOTO 4
Sampling at GM-5. View Southwest.

Approximately 7 gallons was purged from GM-5. The pH/conductivity meter was calibrated with pH 4 buffer solution. The conductivity meter did not work.

1730 Monsanto personnel having already left, the OM left the site. Geraghty & Miller personnel were to leave shortly.

SECTION 3
SUMMARY

Activities performed today included mobilization to the site, attendance of a safety briefing, measurement of water level at wells GM1, GM-2, GM-3, GM-4, GM-5 and MW-14, and purging and sampling of GM-5. No DNAPL was noted at GM-5. Work was performed in modified Level D, with street clothes, steel-toed boots, hard hats, safety glasses and disposable latex gloves.

William W. Gresham

TIMES

SECTION 1 William W. Gresham 9 NOVEMBER 1993
The Oversight Manager (OM) Bill Gresham

Weather: Partly cloudy, breezy, cool (40°F) AM; becoming sunny, warm (60°F) PM

PERSONNEL ON SITE

Name	Title	Company
Jo Hanson,	Project Manager	Monsanto
Rich Koenig,	Environmental Protection Tech	"
Deonne Millgson,	Intern	
Laurie Musiker,	Hydrogeologist	Geraghty & Miller
Russ Schukebir,	Scientist	"
Mike Chenoweth,	Geochemist	Geo Trace
John Upcraft,	Vice President	"

ACTIVITIES PLANNED
Purging and sampling of groundwater will be performed.

SECTION 2

0635 Geraghty & Miller personnel and the OM arrived at the site

0655 Following check-in at the guard station, all proceeded to the quarry, first to well QS-1. An HNu PID was calibrated with 100 ppm isobutylene gas (10.2 eV lamp), while other equipment was readied.

0705 Well QS-1 was opened. The HNu was used to check for VOCs in the well. There was no reading above background. The water level was measured. W.L. = 14.56. T.D. = 102.88. Well QS-1 is a 4-inch well. A Grundfos stainless steel

CONTINUED TIMES

William W. Crosby 9 NOVEMBER 1993

4" submersible pump was decontaminated using alconox in distilled water, followed by a distilled water rinse. This will be used in conjunction with a Honda EB5000X gasoline-powered generator to purge QS-1 of 175 gallons (one well volume ≈ 57 gallons). A steel safety cable and ABS one-inch tubing were attached to the pump.

0735 PHOTO 5
Installing the submersible pump at QS-1. View West.

Laurie and Deonne proceeded to MW-11B, to measure the water level, then purge and sample with a polyethylene disposable bailer on nylon rope. S.WL. = 13.49; T.D. = 32.0 ft.

0745 Pumping commenced at QS-1 at approx. 10gpm.

0750 PHOTO 6
Pumping well QS-1. View Southeast.

MW-11B has been damaged at some point. It is

0805 Pumping at QS-1 completed, with approx. 180 gallons purged.

0810 The ~~well~~ pump was pulled from QS-1. Purging of MW-11B commenced.

0825 The bailer ~~rope~~ broke at MW-11B

0835 Fishing for the bailer ~~rope~~ lost in MW-11B commenced.

CONTINUED TIMES

William W. Crosby 9 NOVEMBER 1993

0840 Laurie reported that they would not be able to recover the polyethylene bailer at MW-11B, but that they could access the water column in the well above the lost bailer.

0845 Sampling commenced at QS-1. Sample ARD41-002 (one 80oz amber) was collected for EPA, sample QS-1 (2 1L amber) for Monsanto. A disposable polyethylene bailer was utilized.

0850 Sample collection completed at QS-1.
PHOTO 7
Collection of sample at QS-1. View Southwest

0855 Field parameter sample collected.

pH	temperature	Conductivity
6.88	63°F	not working.
6.88		

Water is clear.

Geotrace, the geoprobe contractor, arrived.

PHOTO 8
Purging at MW-11B. View North.

All purged groundwater was containerized in 55-gallon steel drums. Some decon fluids, such as that from pump decontamination, ~~fluids~~ was containerized, while the water level indicator spray was discharged on the ground.

0925 Purging complete at MW-11B. Sampling commenced. (Approx. 10 gallons purged.

0930 PHOTO 9
Sample collection at MW-11B. View North.

~~12-99~~

CONTINUED TIMES

William W. Cresham 9 NOVEMBER 1993

Sampling completed at MW-11B. Two 1L amber jars were filled for Monsanto (sample no. MW-11B) while one 80oz. amber jug was filled for EPA (ARD41-003), all for alochlor.

0940 Sample collection complete. Field parameter sample collected.

pH	temperature
6.92/7.05	61° F

Water color grayish-brown, cloudy.

1000 All proceeded to MW-13 vicinity.

1020 While the OM prepared sample containers, Geraghty & Miller and GeoTrace personnel prepared to sample. The geoprobe was set up at location MW-13B, just west of MW-13; S.W.L. at MW-13 = 12.91 ft. btoc.; T.D. = 50.5. A total of 18 gallons will be purged, by bailing.

1030 T.D. on MW-13B geoprobe = 24 ft; the probe was pulled back to 18 ft. A peristaltic pump (Masterflex, same as G&M's) was utilized for sample collection.

1040 PHOTO 10

Purging at MW-13, sampling at MW-13b. View Northwest.

Sample MW-13b collected at MW-13b for Monsanto (EPA sample no. ARD41-014). Monsanto's sample (2 1L amber jars) is for ~~alachlor~~ semi-volatiles, EPA's (one 80oz. amber jug) is for semi-volatiles. Monsanto's

CONTINUED TIMES

9 NOVEMBER 1993

samples will be sent to Savannah Laboratories, Savannah, Georgia.

1110 Purging at MW-13 complete. Russ is unsure of his necessary sample volume, so sampling will be delayed until he finds out.

1120 Four 40ml VOA vials (for VOCs), two 1L amber glass jars (alachlor), ~~two~~ four 1L amber glass jars (semi-volatiles), and ~~one~~ two 500ml HDPE jar (metals) will be collected at MW-13 for Monsanto (sample no. MW-13). Preservatives are nitric acid for metals, HCl for VOCs. A duplicate sample (ARD41-011 and ARD41-012) will be collected for EPA. The extra volume for Monsanto semi-volatiles and metals is for MS/MSD.

1130 Sampling commenced at MW-13.

1150 Sampling completed at MW-13b.

1200 The geoprobe van proceeded to MW-13c. Bailer sampling at MW-13 was completed. A field parameter sample was collected.

pH	temperature
7.06/7.01	66 °F

The peristaltic pump will be utilized to collect the metals samples at MW-13. No field parameter sample was collected at MW-13b.

1215 PHOTO 11

Geoprobe extension at MW-13c. View Southwest

William W. Cresham

CONTINUED TIMES — William W. Crosshan — 9 NOVEMBER 1993

1215 Sampling with the peristaltic pump commenced at MW-13.

1225 All sampling at MW-13 complete.

1235 The OM left the site for lunch and telephone usage.

1335 Following lunch and communication with Pat Reitz and Jan Lydigsen, the OM returned to the site. The geoprobe van is at MW-13d.

1355 PHOTO 12
Sampling through the geo probe at MW-13d.

1400 Obtained EPA sample no. ARD41-015 (Monsanto sample no. MW-13c) collected at 1305.

1435 The OM proceeded to the Lasso area, where Russ and Deonne had just arrived and were preparing to resume purging and sampling, discontinued yesterday. HNu readings were taken at: GM-3 (1ppm at wellhead); GM-4 (2ppm at wellhead); GM-14 (11ppm at wellhead); GM-2 (0ppm at wellhead); and GM-1 (0ppm at wellhead). All breathing zone readings were at or below background levels.
Field parameter readings for MW-13c were:

pH	temperature
6.80/6.74/6.68/6.66	66°F

1455 Purging, with the peristaltic pump, commenced at GM-3. No NAPL was noted.

CONTINUED TIMES — William W. Crosshan — 9 NOVEMBER 1993

1505 A sheen was noted on top of the purge water, which is otherwise slightly cloudy.

1510 PHOTO 13
Purge water from GM-3, with slight sheen. View Down.

Sampling commenced at GM-3 (Monsanto sample no. GM-3, EPA sample no. ARD41-004). Only alachlor samples will be collected.

1515 PHOTO 14
Sampling at GM-3. View Southwest.

Sampling completed at GM-3. Field parameter sample collected.

pH	temperature
6.76/6.80/6.82	68°F

1530 Russ proceeded to GM-4, while Laurie and Deonne proceeded to MW-5.

1545 Began pumping GM-4.

1550 PHOTO 15
Pumping GM-4. View Northwest.

Pumping at GM-4 was completed. A slight sheen was apparent on top of the purged water.

1555 The OM proceeded to MW-5, where Deonne was present bailing the well to purge it.

CONTINUED TIMES

William W. Gresham 9 NOVEMBER 1993

Russ proceeded to GM-1 to set up for purging.

1600 Purging at MW-5 complete. The OM returned to GM-1, then back to MW-5.

1610 Sampling commenced at MW-5 (Monsanto sample no. MW-5, EPA sample no. ARD41-006) for alachlor.

1620 Sampling complete at MW-5.

1625 PHOTO 16
Collecting field parameter sample at MW-5. View Southeast.

pH	temperature
7.02/7.01	68°F

1635 The OM returned to the Lasso area. Well GM-1 had been sampled at 1630. Field parameters were:

pH	temperature
7.12/7.15/7.15/7.17	66°F

Sample nos. for GM-1: EPA (ARD41-005); Monsanto (GM-1). A sheen was present on the purge water. Russ was set up at GM-2, purging to look for NAPLs

1655 Russ began set-up at MW-14.

1700 The OM proceeded to MW-4, where Deonne was bailing the well to purge it.

1710 PHOTO 17

CONTINUED TIMES

William W. Gresham 9 NOVEMBER 1993

Purging well MW-4. View Southwest.

1715 The OM returned to MW-14. Russ had purged just a bit (less than one gallon).

1725 PHOTOS 18, 19
NAPL purged from MW-14. View Down.

The product in MW-14 is a brown LNAPL, forming globules.

1730 Purging completed at MW-14 (~2-3 gallons)

1735 Sampling commenced at MW-14 and at MW-4. (MW-4 had been bailed dry earlier).

1740 Sampling complete at MW-4. (EPA sample no. ARD41-009, Monsanto sample no. MW-4).
Field parameters:

pH	temperature
7.14/7.16/7.18/7.20	62°F

1750 Sampling complete at MW-14 (EPA sample no. ARD41-007 for alachlor, ARD41-025 for VOCs, Monsanto sample no. MW-14). The VOC sample and the extra alachlor volume was collected because LNAPLs were observed. There was too little volume of LNAPL to sample only the LNAPL, which was gone after purging. Monsanto collected only an alachlor sample.

1755 Field parameters at MW-14:

pH	~~conductivity~~ pc, temp
7.14/7.18/7.10	66°F/64°F

CONTINUED

TIMES

9 NOVEMBER 1993

1810 Sampling commenced at MW-13A as the OM arrived. Field parameters:

pH	~~temperature~~
7.13/7.12/7.11/7.12	65°F

1815 PHOTO 20
Sampling at MW-13A. View Northwest.

1820 Sampling completed at MW-13A (EPA sample nos ARD41-019, ARD41-020, Monsanto sample no MW-13A). All samples collected for ~~alachlor~~ semi-volatiles.

1850 Following sample preparation and planning of tomorrow's activities, the OM left the site.

SECTION ③
SUMMARY

Groundwater sampling was performed at QS-1, MW-11B, MW-13, GM-3, MW-5, GM-1, MW-14 and MW-4, as well as geoprobe locations MW-13a, MW-13b and MW-13c. Split samples were obtained at all of these locations. At geoprobe locations MW-13d, -13e and -13f, the probe was driven but, due to slow recharge, samples have not yet been collected. Trip Blank ARD41-033-F was prepared at 1830. Rich explained that the water produced during purging activities, which was containerized in steel 55-gallon drums, would be analyzed, then disposed of appropriately, usually following filtration.

William W. Gresham

TIMES

SECTION ① William W. Gresham 10 NOVEMBER 1993

The Oversight Manager (OM) Bill Gresham

Weather: Clear, breezy, cool (40°F) AM; becoming partly cloudy, temperature rising to ~ 65°F PM

PERSONNEL ON SITE

Name	Title	Company
Jo Hanson,	Project Engineer,	Monsanto
Rich Koenig,	Environmental Protection Tech,	"
Deonne Milleson,	Intern	
Laurie Musiker,	Hydrogeologist	Geraghty & Miller
Russ Schlukebir,	Scientist	
Mike Chenoweth,	Geochemist	GeoTrace
Brian Barrett,	Chemist	"
John Upcraft,	Vice-President	"
Bret Bershe[illegible],	Geologist	"

ACTIVITIES PLANNED

Further ground water purging and sampling will be together perfomed.

~~linch~~

SECTION ②

0620 The OM updated EPA WAM Pat Reitz via voicemail.

0635 The OM arrived at the site.

0645 Geraghty & Miller and Monsanto personnel arrived at the site.

0700 All proceeded into the plant, staging near MW-13.

0710 Mike from GeoTrace arrived at the site.

CONTINUED TIMES

William W. Gresham 10 NOVEMBER 1993

0730 Laurie, Deonne and the OM proceeded to MW-3.

0735 The well head was checked with an HNu. Readings did not exceed background levels.

0740 Static W.L. at MW-3 = 11.36 ft. above t.o.c. T.D. = 33 ft.

0745 Bailing/purging of MW-3 commenced.

0800 The OM returned to the MW-13 area, where GeoTrace was still trying to sample at MW-13e.

0810 It was decided that MW-13e would not produce enough water for a sample, and so to pull out.

PHOTO 21
Pulling out of geoprobe at MW-13e. View Northeast.

0820 The OM proceeded to OBS-1, where Russ was preparing to begin purging with the 4-inch submersible pump. A check with the HNu revealed a reading 0.2 ppm over background. Static W.L. = 24.36 ft below t.o.c. T.D. = 62.67 below t.o.c. Each well volume ≈ 25 gallons, so 75 gallons will be purged.

0840 The OM returned to MW-3. Purging, of approx. 10 gallons, had been completed. Sampling had commenced. A field parameter sample had been

CONTINUED TIMES

William W. Gresham 10 NOVEMBER 1993

collected.

pH	temperature
7.19/7.19/7.20/7.20	62°F

The Monsanto sample (no. MW-3) was collected for VOCs and alachlor (two 1L amber jugs, four 40ml vials). The EPA sample (no. ARD41-010) was collected for the same parameters (one 80oz amber jug, four 40ml vials). Sampling had commenced at 0835.

0850 Sampling at MW-3 completed.

PHOTO 22
Sampling activities at MW-3. View Northwest.

0905 Proceeded to OBS-1, where pumping had commenced at 0855.

0920 Pumping (purging) complete at OBS-1. Approx. 90 gallons were purged into two 55-gallon steel drums.

0935 Laurie returned the container from MW-13D. Enough groundwater was recovered for Monsanto's sample (no. MW-13D), but the EPA sample container was filled only ~10%. Too little water was produced for a field parameter sample.

10~~9~~00 Sampling commenced at OBS-1, utilizing a 3-ft. long by 1½-inch diameter HDPE bailer on nylon rope (¼-inch diameter). The Monsanto sample

CONTINUED TIMES

10 NOVEMBER 1993

(no. OBS-1) is being collected for VOCs analysis, along with matrix spike and matrix spike duplicate samples, with a total of twelve 40ml. VOA vials filled. The EPA sample (no. ARD41-029) is being collected for VOCs analysis as well; four 40ml VOA vials filled. All are preserved with 2 drops HCl.

PHOTO 23
Sampling at OBS-1. View Northeast.

1010 Sampling at OBS-1 complete.
Field parameters:

pH	Temperature
7.05/6.98/6.94	66°F

1025 The OM proceeded to MW-13F, where there was little water production.

1050 Following further advancement of the probe, to 33 ft. (T.D., screen at 28-30 ft bgs.), water production markedly increased. This production did fall off, however.

1120 The OM accompanied Russ off-site to MW-15.

1140 Static W.L. at MW-15 = 13.97 feet below t.o.c. T.D. = 18 ft. Approximately 2 gallons will be purged with the peristaltic pump. The HNu measurement indicated nothing above background.

1145 Because Russ had forgotten the peristaltic pump, it was decided to break for lunch.

1155 The OM left the site for lunch.

William W. Crosshan

CONTINUED TIMES

William W. Crosshan 10 NOVEMBER 1993

1230 The OM returned to the site following lunch and telephone usage.

1250 The OM proceeded to the Lasso area. Mike handed over sample ARD41-018 from MW-13F. Sample time was 1050-1150.

1300 The OM proceeded to MW-20.

1330 - 1345 Sample (Monsanto) MW-20 collected using a peristaltic pump for cyanide and metals. One 500ml HDPE jar was filled for each. MS and MSD samples were collected for both parameters. A split sample and a duplicate for EPA (ARD41-027/028) was collected as well (~~three~~ four 1L cubitainers), for both parameters.
Field parameters: pH 7.13/7.15/7.26; temp 70°F

1420 Following purging of ~ 12 gallons with a disposable bailer, sampling began at MW-8A (EPA sample no. ARD41-030 and -031 [duplicate]). Four VOA vials for Monsanto, 8 for EPA.

1430 Sampling complete at MW-8A.
Field parameters:

pH	temperature
6.84/6.81/6.81	67°F

PHOTO 24
Sampling at MW-8A. View Southeast.

The OM discussed with Laurie the possibility that no sampling from the geoprobe efforts near MW-20 would yield enough water for actual samples. It was decided that if no samples

CONTINUED TIMES

William W. Gresham 10 NOVEMBER 1993

were actually collected, none would get collected because of utility interferences and poor geologic conditions for sample recovery.

1505 Sample MW-20B (EPA sample ARD41-023) for cyanide was collected (one 1L cubitainer for EPA, one 500ml HDPE bottle for Monsanto).

1510 The Hach analysis for cyanide on MW-20B shows no colorimetric change.

1520 PHOTO 25
Geoprobe at MW-20A. View Northeast.

1525 PHOTO 26
Hach analysis for cyanide on sample from MW-20B. View East.

1540 All GeoTrace personnel, Laurie and Deonne left the site.

1555 Russ and the OM proceeded to MW-15.

1610 Following set-up, purging with the peristaltic pump commenced.

1615 PHOTO 27
Purging at MW-15. View Down.

A slight sheen was noted on the purge water generated so far. Monsanto sample no. MW-15

CONTINUED TIMES

William W. Gresham 10 NOVEMBER 1993

will be sampled for alachlor (plus matrix spike and matrix spike duplicate samples) and metals. A total of six 1-L amber glass jars will be filled, along with one 500ml HDPE jar. EPA sample no. ARD41-021 will be sampled for the same parameters. One 80oz amber glass jug and one 1-L HDPE cubitainer will be filled.

1625 Sampling commenced at MW-15.

1630 PHOTO 28
Sample collection at MW-15. View Northeast.

1640 Sampling at MW-15 completed. Field parameter sample collected.

pH	temperature
7.20/7.18/7.19	63°F/64°F

1700 Activities complete at MW-15. Jo left and Russ and the OM proceeded to VW-2.

1725 VW-2 was located.

1730 HNu reading at well head not above background. Static W.L. at VW-2 = 9.98 ft. below t.o.p. It appears there is approx 6 ft. of LNAPL.

1805-1810 Sample ARD41-026 was collected for VOCs analysis. Two 40ml VOA vials were filled. One 4oz wide-mouth glass jar was filled for Monsanto. It may or may not be submitted for analysis. A 3-foot long by 1½-inch diameter teflon top-

TIMES

10 NOVEMBER 1993

filling bailer was utilized for purging and sampling.

1820 Sampling for LDL VOCs at VW-2 commenced (Monsanto sample no. VW-2, four 40ml VOA vials, EPA sample no. ARD41-032, four 40ml VOA vials).

1830 Sampling completed at VW-2.
Field parameters:

pH	Temperature
7.26/7.20	64°F

PHOTO 29
Sampling at VW-2. View Southeast.

1900 Russ and the OM left VW-2 and returned to the plant.

1945 Following sample preparation, The OM and Russ left the site.

SECTION ③
SUMMARY

Purging and sampling were performed at MW-3, OBS-1, MW-15, MW-13f, MW-20, MW-8A, MW-20b and VW-2. Trip blanks ARD41-34-F and -35-F were prepared at 1930.

William W. Gresham

William W. Gresham

TIMES

SECTION ①

11 NOVEMBER 1993

The Oversight Manager (OM) Bill Gresham

Weather: Partly sunny, breezy, cool (50°F) AM;

PERSONNEL ON SITE

Name	Title	Company
Russ Schlukebir,	Scientist	Geraghty & Miller

ACTIVITIES PLANNED
A rinsate blank sample will be collected. MW-14 will be examined and possibly sampled for the LNAPL layer.

SECTION ②

0805 The OM arrived at the site. Russ was already present.

0830 Proceeded to MW-14.
PHOTO 30
Pulling the dedicated bailer at MW-14. View West.

PHOTO 31
Product on the bailer from MW-14. View West.

0850 Collection of rinsate blank commenced (EPA sample no. ARD41-013, collected for VOCs, alachlor, semi-volatiles and metals; Monsanto collected for alachlor only). Top-filling bailer used.

0910. Collection of rinsate blank completed

CONTINUED

TIMES

11 NOVEMBER 1993

0915 Collection of ARD41-036, a VOC sample (LDL) from MW-14, commenced, with top-filling bai

PHOTO 32
Top-filling bailer with groundwater/LNAPL sample from MW-14. View Southeast.

0920 Collection of sample from MW-14 complete. Monsanto retained a 4 oz. glass container filled with a split of this sample. It is unclear whether it will be submitted for analysis. Little if any product was observed in the sample container.

0925 PHOTO 33
Bailer used in MW-14, partially decontaminated. View South.

1005 Following sample preparation activities, the OM left the site to return to Kansas City.

1458 The OM arrived back at the Lenexa Jacobs office.

SECTION 3
SUMMARY

The top-filling bailer utilized last night at VW-2 was ~~utilized~~ used for a rinsate blank sample (following careful decontamination), then employed for upper-zone sampling at MW-14. This concluded sampling activities for this event.

William W. Gresham

ATTACHMENT C

Chain of Custody/Field Sheets

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Pat Reitz	Monsanto	03 November 1993	1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: 1L CUBITAINER	40oz BOTTLE	BOTTLE	VOA SET (4 BOTTLE EA)	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
ARD41-001		1				X					
ARD41-002		1				X					
ARD41-003		1				X					
ARD41-004		1				X					
ARD41-005		1				X					
ARD41-006		1				X					
ARD41-007		2				X					
ARD41-009		1				X					
ARD41-010		1		1		X					
ARD41-011	1	2		1		X					
ARD41-012	1	2		1		X					
ARD41-013	1	2		1		X					
ARD41-014		1				X					
ARD41-015		1				X					
ARD41-018		1				X					
ARD41-019		1				X					
ARD41-020		1				X					
ARD41-021	1	1				X					
ARD41-023	1					X					
ARD41-025					1	X					
ARD41-026					1	X					
ARD41-027	2					X					
ARD41-028	2					X					
ARD41-029				1		X					

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S); OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
William W. Wrecker ☐ SEALED UNSEALED ☑	11/12/93	1045	Kriya L. Lowman ☐ SEALED UNSEALED ☑	Analysis
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Pat Reitz	Monsanto	08 / November / 1993	2 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: 1-L CUBITAINER	8Oz BOTTLE	BOTTLE	VOASET (4 BOTTLE EA)	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
ARD41-030				1		X					
ARD41-031				1		X					
ARD41-032				1		X					
ARD41-033-F				1		X					
ARD41-034-F				1		X					
ARD41-035-F				1		X					
ARD41-036				1		X					

DESCRIPTION OF SHIPMENT

45 PIECE(S) CONSISTING OF _____ BOX(ES)

4 ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

___ COMMERCIAL CARRIER: _____

___ COURIER

X SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
William W. Crenshaw ☐ SEALED ☒ UNSEALED	11/12/93	1045	Kaye L Dollmann ☐ SEALED ☒ UNSEALED	analysis
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 001 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: GM-5

OCATION: _____ MO

ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/8/93	17:00	EAST:	____
END:	__/__/__	__:__	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH	temperature
6.89	68°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 002 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: QS-1

OCATION: _____ MO

ASE/BATCH/SMO: ___/___/___ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	08:50	EAST:	____
END:	__/__/__	__:__	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

PH	temperature
6.88	63°F

SAMPLE COLLECTED BY : Bill Gresham

)RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

.Y: 94 ACTNO: ARD41 SAMNO: 003 QCC: _ MEDIA: WATER PL: DONA, BOB

.CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

.OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

;AMPLE DES: MW-11B

.OCATION: _____ MO

.ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	09:35	EAST:	____
END:	__/__/__	__:__	NORTH:	____
			DOWN:	____

.NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
;LASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

PH
7.05

temperature
61°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

.I: 94 ACTNO: ARD41 SAMNO: 004 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: GM-3

OCATION: _____ MO

ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	15:15	EAST:	____
END:	__/__/__	__:__	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
6.82

temperature
68°F

SAMPLE COLLECTED BY : Bill Carlston

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 005 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: GM-1 DATE TIME FROM REF PT
LOCATION: _____ MO BEG: 11/9/93 16:30 EAST: ____
CASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/AIRS NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.17

temperature
66°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

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rY: 94 ACTNO: ARD41 SAMNO: 006 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-5 DATE TIME FROM REF PT
OCATION: _____ MO BEG: 11/9/93 16:20 EAST: ____
ASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/AIRS NO: _____ DOWN: ____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
LASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH	temperature
7.01	68°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

.Y: 94 ACTNO: ARD41 SAMNO: 007 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-~~8~~ 14

OCATION: _____ MO

CASE/BATCH/SMO: ___/___/___ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT
BEG:	11/9/93	10:35	EAST: ___
END:	__/__/__	17:50	NORTH: ___
			DOWN: ___

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
LASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH

7.10 BG

temperature

64 BG °F

'AMPLE COLLECTED BY : Bill Aresham

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 009 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY
LOCATION: ST. LOUIS MO PROJECT NUM: A60
REF PT: LATITUDE: __ __ __
LONGITUDE: __ __ __

SAMPLE DES: MW-4
LOCATION: _____ MO
CASE/BATCH/SMO: ____/__/____ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME
BEG:	11/9/93	17:40
END:	__/__/__	__:__

FROM REF PT
EAST: ____
NORTH: ____
DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

PH
7.20

temperature
62°F

SAMPLE COLLECTED BY : Bill Grisham

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 010 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY
LOCATION: ST. LOUIS MO PROJECT NUM: A60
REF PT: LATITUDE: __ __ __
LONGITUDE: __ __ __

SAMPLE DES: MW-3
LOCATION: _____ MO
CASE/BATCH/SMO: ____/__/____ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	08:35	EAST:	____
END:	__/__/__	08:50	NORTH:	____
			DOWN:	____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
4-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.20

temperature
62°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 011 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-13
OCATION: _____ MO
ASE/BATCH/SMO: ____/__/____ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT
BEG:	11/9/93	11:30	EAST: ____
END:	11/9/93	12:25	NORTH: ____
			DOWN: ____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
LASS	ICED	WS	SEMIVOLATILES
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
1-LITER CUBITAI	5 ML HN03	W35	TOTAL METALS-CLP
LASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.01

temperature
66°F

AMPLE COLLECTED BY : Bill Gibson

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 012 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: MW-13
LOCATION: _____ MO
CASE/BATCH/SMO: ____/__/____ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	11:30	EAST:	____
END:	__/__/__	12:25	NORTH:	____
			DOWN:	____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	ICED	WS	SEMIVOLATILES
		W13	LABEL FOR CUBI
4-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
1-LITER CUBITAI	5 ML HN03	W35	TOTAL METALS-CLP
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.01

temperature
66°F

SAMPLE COLLECTED BY : Bill Gresh

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 013 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: Rinsate Blank

LOCATION: _____ MO

CASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/11/93	08:50	EAST:	____
END:	__/__/__	09:10	NORTH:	____
			DOWN:	____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	ICED	WS	SEMIVOLATILES
		W13	LABEL FOR CUBI
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
4-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
1-LITER CUBITAI	5 ML HN03	W35	TOTAL METALS-CLP
GLASS	COOL (4 C)	WP27	ALACHLOR

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

.Y: 94 ACTNO: ARD41 SAMNO: 014 QCC: _ MEDIA: WATER PL: DONA, BOB

.CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

.OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

:AMPLE DES: MW-13b (G1)

.OCATION: _____ MO

.ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	10:30	EAST:	____
END:	__/__/__	11:50	NORTH:	____
			DOWN:	____

.NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
:LASS	ICED	WS	SEMIVOLATILES

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH temperature

no field parameters taken

SAMPLE COLLECTED BY : Bill Crisher

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 015 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: MW-13c
LOCATION: _____ MO
CASE/BATCH/SMO: ____/__/____ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	13:05	EAST:	____
END:	__/__/__	__:__	NORTH:	____
			DOWN:	____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	ICED	WS	SEMIVOLATILES

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
6.66

Temperature
66°F

SAMPLE COLLECTED BY : Bill Crisham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 018 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-13f

OCATION: _____ MO

ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	10:50	EAST:	____
END:	__/__/__	11:50	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
LASS	ICED	WS	SEMIVOLATILES

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

no field parameters taken

AMPLE COLLECTED BY : Bill Cresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 019 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: MW-13A

LOCATION: _____ MO

CASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	18:10	EAST:	____
END:	__/__/__	18:20	NORTH:	____
			DOWN:	____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
GLASS	ICED	WS	SEMIVOLATILES

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.12

temperature
65°F

SAMPLE COLLECTED BY : Bill Cornshan

)RAFT

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 020 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY
OCATION: ST. LOUIS MO PROJECT NUM: A60
REF PT: LATITUDE: __ __ __
LONGITUDE: __ __ __

AMPLE DES: MW-13A
OCATION: _____ MO
ASE/BATCH/SMO: ____/__/____ LAB: ___
TORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	18:10	EAST:	____
END:	__/__/__	18:20	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
LASS	ICED	WS	SEMIVOLATILES

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

PH	temperature
7.12	65°F

AMPLE COLLECTED BY : Bill Gruber

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

.Y: 94 ACTNO: ARD41 SAMNO: 021 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-15

OCATION: _____ MO

ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	16:25	EAST:	____
END:	__/__/__	16:40	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
-LITER CUBITAI	5 ML HN03	W35	TOTAL METALS-CLP
LASS	COOL (4 C)	WP27	ALACHLOR

OMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH	temperature
7.19	64°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 023 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-20B

OCATION: _____ MO

ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	15:05	EAST:	____
END:	__/__/__	__:__	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
UBI	NAOH	WT09	CYANIDE, TOTAL

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

no field parameters taken

AMPLE COLLECTED BY : Bill Gresham

AFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

: 94 ACTNO: ARD41 SAMNO: 025 QCC: _ MEDIA: WATER PL: DONA, BOB

TIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

CATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

MPLE DES: MW-14

CATION: _____ MO

CASE/BATCH/SMO: ____/__/____ LAB: ___

TORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/9/93	17:35	EAST:	____
END:	__/__/__	17:50	NORTH:	____
			DOWN:	____

ALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
40 ML VIALS	HCL +COOL (4 C)	WV	WATER VOLATILES

OMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH 7.10

~~temperature~~ 64°F

MPLE COLLECTED BY : Bill Gresham

DRAFT

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 026 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: VW-2 DATE TIME FROM REF PT
LOCATION: _____ MO BEG: 11/10/93 18:05 EAST: ____
CASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ 18:10 NORTH: ____
STORET/AIRS NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
-40 ML VIALS	HCL +COOL (4 C)	WV	WATER VOLATILES

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.20

temperature
64°F

SAMPLE COLLECTED BY : Bill Cresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

_Y: 94 ACTNO: ARD41 SAMNO: 027 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A6C PT: LONGITUDE: __ __ __

AMPLE DES: MW-20

OCATION: _____ MO

ASE/BATCH/SMO: ___/__/___ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	13:30	EAST:	____
END:	__/__/__	13:45	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
-LITER CUBITAI	5 ML HN03	W35	TOTAL METALS-CLP
UBI	NAOH	WT09	CYANIDE, TOTAL

OMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
7.26

temperature
70°F

AMPLE COLLECTED BY : Bill Cresham

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 028 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: MW-20

LOCATION: _____ MO

CASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	13:30	EAST:	____
END:	__/__/__	13:45	NORTH:	____
			DOWN:	____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
1-LITER CUBITAI	5 ML HN03	W35	TOTAL METALS-CLP
CUBI	NAOH	WT09	CYANIDE, TOTAL

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

PH
7.26

temperature
70°F

SAMPLE COLLECTED BY : Bill Cresham

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 029 QCC: _ MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: OBS-1 DATE TIME FROM REF PT
LOCATION: _____ MO BEG: 11/10/93 10:00 EAST: ____
CASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ 10:10 NORTH: ____
STORET/AIRS NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
6.94

temperature
66°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 030 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-8A
OCATION: _____ MO
ASE/BATCH/SMO: ___/__/___ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	14:20	EAST:	____
END:	__/__/__	14:30	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
6.81

temperature
67°F

SAMPLE COLLECTED BY : Bill Gustam

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

_Y: 94 ACTNO: ARD41 SAMNO: 031 QCC: _ MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: MW-8A

OCATION: _____ MO

_ASE/BATCH/SMO: ____/__/____ LAB: ___

STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	14:20	EAST:	____
END:	__/__/__	14:30	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
4 ~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

OMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH
6.81

Temperature
67°F

AMPLE COLLECTED BY : Bill Crishm

RAFT

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

.Y: 94 ACTNO: ARD41 SAMNO: 032 QCC: _ MEDIA: WATER PL: DONA, BOB

.CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
.OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: VW-2
.OCATION: _____ MO
.ASE/BATCH/SMO: ____/__/____ LAB: ___
STORET/AIRS NO: _____

	DATE	TIME	FROM REF PT	
BEG:	11/10/93	18:20	EAST:	____
END:	__/__/__	18:30	NORTH:	____
			DOWN:	____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

pH 7.20

temperature 64°F

SAMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 033 QCC: F MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: TRIP BLANK DATE TIME FROM REF PT

OCATION: _____ MO BEG: 11/9/93 18:30 EAST: ____

ASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ __:__ NORTH: ____

STORET/AIRS NO: _____ DOWN: ____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

OMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

AMPLE COLLECTED BY : Bill Gresham

RAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Y: 94 ACTNO: ARD41 SAMNO: 034 QCC: F MEDIA: WATER PL: DONA, BOB

CTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
OCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

AMPLE DES: TRIP BLANK DATE TIME FROM REF PT
OCATION: _____ MO BEG: 11/10/93 19:30 EAST: ____
ASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/AIRS NO: _____ DOWN: ____

NALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
4-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

SAMPLE COLLECTED BY : Bill Gresham

DRAFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FY: 94 ACTNO: ARD41 SAMNO: 035 QCC: F MEDIA: WATER PL: DONA, BOB

ACTIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __
LOCATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

SAMPLE DES: TRIP BLANK DATE TIME FROM REF PT
LOCATION: _____ MO BEG: 11/10/93 19:30 EAST: ____
CASE/BATCH/SMO: ____/__/____ LAB: ___ END: __/__/__ __:__ NORTH: ____
STORET/AIRS NO: _____ DOWN: ____

ANALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
4-40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~4-40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

COMMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

SAMPLE COLLECTED BY : Bill Gresham

AFT

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII

ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

_: 94 ACTNO: ARD41 SAMNO: 036 QCC: F MEDIA: WATER PL: DONA, BOB

TIVITY DES: MONSANTO QUEENY REF LATITUDE: __ __ __

CATION: ST. LOUIS MO PROJECT NUM: A60 PT: LONGITUDE: __ __ __

MPLE DES: ~~TRIP BLANK~~ DATE TIME FROM REF PT

CATION: MW-14 MO BEG: 11/11/93 09:15 EAST: ____

SE/BATCH/SMO: ___/__/___ LAB: ___ END: __/__/__ 09:20 NORTH: ____

STORET/AIRS NO: ____ DOWN: ____

ALYSIS REQUESTED:

CONTAINER	PRESERVATIVE	MGP	NAME
		W13	LABEL FOR CUBI
40 ML VIALS	HCL+COOL (4 C)	W13	LDL VOLATILE ORGANIC COMPO
~~40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~
~~40 ML VIALS~~	~~HCL+COOL (4 C)~~	~~W13~~	~~LDL VOLATILE ORGANIC COMPO~~

MMENTS: FOR SUPERFUND ONLY: SUBSITE IDENTIFIER:___ OPERABLE UNIT:___

AMPLE COLLECTED BY : Bill Crestman