Supplemental Environmental Field Investigation Report for Solid Waste Management Unit No. 17 Boeing Tract 1 South Property Hazelwood, Missouri Facility

Prepared for:
McDonnell Douglas Corporation
(A wholly-owned subsidiary of The Boeing Company)
St. Louis, Missouri

Prepared by:

MACTEC

MACTEC Engineering and Consulting, Inc.
(f/k/a Harding ESE, Inc.)
St. Louis, Missouri

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List of Abbreviations and Acronyms

AST	aboveground storage tank
bgs	below ground surface
Boeing	The Boeing Company
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CALM	Cleanup Levels for Missouri
COCs	constituents of concern
DOT	Department of Transportation
DROs	Diesel Range Organics
DQOs	data quality objectives
ESE	Environmental Science and Engineering, Inc.
ITLs	investigation threshold levels
MCLs	Maximum Contaminant Levels
MDC	McDonnell Douglas Corporation
MDNR	Missouri Department of Natural Resources
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MTBE	methyl tert butyl ether
No.	Number
OD	outside diameter
PAHs	polynuclear aromatic hydrocarbons
PCE	tetrachloroethene
PID	photoionization
ppm	parts per million
PRGs	Preliminary Remediation Goals
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
SLAPS	St. Louis Airport Site
SOW	Statement of Work
SWMU	Solid Waste Management Unit
TCE	trichloroethene
TPH	total petroleum hydrocarbons
USCS	Unified Soil Classification System
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOCs	volatile organic compounds

1.0 Introduction

This document, prepared by MACTEC Engineering and Consulting, Inc. (f/k/a Harding ESE, Inc.) for McDonnell Douglas Corporation (MDC), a wholly-owned subsidiary of The Boeing Company (Boeing), presents the results of additional soil and groundwater sampling activities conducted at the Solid Waste Management Unit No. 17 (SWMU No. 17). This unit is also known as the former Transfer Area for Recovered PCE. The SWMU No. 17 site (Site) is located in Hazelwood, Missouri. Figure 1-1 displays the location of the Site.

The Supplemental Environmental Field Investigation activities described in this report were conducted in accordance with Section 7.3 (1) of the 2001 Annual Monitoring Report for SWMU No. 17 (Harding ESE, 2002a) and the Environmental Field Investigation Statement of Work (SOW) for Boeing Tract I South (Harding ESE, 2002b).

The Facility is subject to the requirements of as outlined in the final Resource Conservation and Recovery Act (RCRA) Part B Permit No. MOD000818963. This permit was issued by the Missouri Department of Natural Resources (MDNR) on March 5, 1997 pursuant to Section 3004(u) of RCRA. This Report has been prepared in accordance with Corrective Action Permit Conditions I, VI, and XIV and the MDNR-approved RFI Work Plan dated November 24, 1997.

1.1 Purpose

The purpose of the Environmental Field Investigation was to further evaluate the horizontal extent of groundwater impacts along the south and southeast side of the unit. Based on implementation of the SOW this report presents the findings of the Supplemental Environmental Field Investigation and presents MDC's evaluation and conclusions regarding the Supplemental Environmental Field Investigation data.

1.2 Environmental Field Investigation Report Organization

The Environmental Field Investigation Report is divided into six sections of text plus three appendices. A brief description of each section is presented below.

- Section 1.0, Introduction, provides background information regarding the regulatory requirements for the Site, purpose of this report, and contents of this report.
- Section 2.0, Objectives and Supporting Data Requirements, summarizes the investigation objectives, identifies the target constituents and associated investigation threshold levels (ITLs) for the Supplemental Environmental Field Investigation, and describes the established data quality objectives for the investigation.
- Section 3.0, Supplemental Environmental Field Investigation Activities, summarizes the field activities and describes the procedures that were utilized for all field sampling and laboratory analysis tasks.
- Section 4.0, Supplemental Environmental Field Investigation Results, summarizes the geological, hydrogeological, and analytical results of the Supplemental Environmental Field Investigation.

- Section 5.0, Conclusions, presents conclusions reached based on the Supplemental Environmental Field Investigation data and previous data collected from SWMU No. 17.
- Section 6.0, References, provides a list of references used within the text of this Supplemental Environmental Field Investigation report.

Three appendices are also provided to describe associated Environmental Field Investigation activities. Appendices to this document are identified below.

- Appendix A Soil Boring Logs
- Appendix B Groundwater Sampling Field Record Forms
- Appendix C Analytical Laboratory Reports and Chain-of-Custody Forms

2.0 Objectives and Supporting Data Requirements

An investigation to delineate the nature and extent of any releases at the Site requires various types and amounts of information. Specific investigation approaches, methodologies, and data are required to facilitate the investigation process. This section of the document summarizes the general strategy presented in the 2001 Annual Monitoring Report (Harding ESE, 2002a) and the Environmental Field Investigation Statement of Work for Boeing Tract I South (Harding ESE, 2002b) for collection of the data needed to achieve the investigation objectives at the Site.

2.1 Project Objectives

The objective of the Environmental Field Investigation was to characterize the southern and southeastern extent of volatile organic compounds (VOCs) in the soil or groundwater at the Site.

2.2 Data Quality Objectives

The intended use of the various data types was evaluated to establish appropriate data quality objectives (DQOs). A summary of this evaluation is provided below.

The following DQO levels were deemed appropriate:

1. DQO Level I was deemed appropriate to conduct screening and acquire data for basic site characterization (e.g., pH, temperature, specific conductance, water level elevations, physical descriptions, photoionization (PID) readings, and other similar geologic/hydrogeologic information). Specifically, the data acquired under DQO Level I were used to
   - detect changes in groundwater characteristics.
   - develop groundwater elevation isopleth maps and evaluate groundwater flow gradients,
   - describe basic physical properties of investigated media, and
   - verify adequate purging of monitoring wells.

2. DQO Level III was deemed appropriate for soil and groundwater sample analyses. The data acquired under DQO Level III was used to characterize constituent concentrations in various media and delineate the nature/extent of any releases of hazardous wastes/constituents. These data may also be used to determine soil/groundwater clean-up objectives, support a risk assessment, and support engineering evaluations necessary to select and design corrective measures, if required.

2.3 Investigation Threshold Levels (ITLs)

ITLs were developed in the SOW to aid in the determination of whether additional field investigations, site-specific risk assessments, and/or remediation efforts are warranted. ITLs were utilized during this Environmental Field Investigation as a comparative baseline for site-specific analytical results (e.g., to determine whether a release to soil has been delineated or assess whether groundwater impacts are present). For the purposes of this Supplemental Environmental Field Investigation, ITLs represent values which incorporate both risk-based action levels and regulatory levels. As a result, the comparative process for analytical results is simplified. Similar ITLs were developed and used in connection with

investigation of the Fabrication Operations property immediately north of the Site. The ITLs to be used for this Supplemental Environmental Field Investigation incorporate changes in MDNR and U.S. Environmental Protection Agency (USEPA) risk-based action levels.

3.0 Supplemental Environmental Field Investigation Activities

This section summarizes Supplemental Environmental Field Investigation activities conducted in November and December 2002 to evaluate potential environmental impacts at the Site. These activities included: soil boring installations, soil sampling and analyses, temporary piezometer completion, and groundwater monitoring, sampling, and analyses.

3.1 Installation of Soil Borings

Three soil borings were installed to further evaluate the horizontal extent of groundwater impacts along the south and southeast side of the unit. The soil boring activities were also completed to further evaluate the geological and hydrogeological systems at the Site. The locations of the soil borings along with existing monitoring well and piezometers at the Site are presented on Figure 3-1.

Under the supervision of MACTEC field personnel, subsurface investigative activities at SWMU No. 17 were conducted by Roberts Environmental Drilling, Inc. of Millstadt, Illinois on November 11, 2002. Soil boring activities were completed using a track-mounted (GeoProbe® Model 6610DT) hydraulic probe rig.

The shallow soil borings were installed using standard direct push soil probe methodology. Direct push soil borings completed with the Geoprobe® rig were advanced using a 2.0-inch outside diameter (OD) macro-core sampler and 1.25-inch OD steel probing rods.

Prior to drilling at the initial and all subsequent borings, ancillary rig equipment was cleaned to eliminate cross-contamination between successive drilling locations. The soil sampling rods and samplers were cleaned/detergent washed between sampling locations.

Continuous soil samples were collected from each boring for field screening, lithographic description, and subsequent chemical analysis. Each disposable sampling tube liner was opened and immediately scanned with a PID to identify potential presence of VOCs. To maintain lithographic descriptive consistency, each soil sample was described and classified in accordance with the Unified Soil Classification System (USCS).

Soil cuttings generated were containerized in 55-gallon Department of Transportation (DOT)-approved drums for subsequent management by Boeing.

3.2 Soil Sampling and Analysis

Soil samples were collected from each boring to evaluate the nature and extent of any hazardous constituent or hazardous waste releases to soils at the Site. Soil sampling activities were also completed to further evaluate the geological and hydrogeological systems beneath the Site. Continuous soil samples were collected from selected borings for field screening, lithographic description, and subsequent chemical analysis.

Each soil sample was screened in the field with a PID for total organic vapors by the headspace method. This process involved placing a portion of the soil sample into a resealable plastic bag and allowing time for volatilization, if any, to occur. The PID probe was then inserted into the plastic bag. The highest PID reading measured for the initial 10-second period was recorded on the boring log form in units of parts per million (ppm).

All field screening equipment was calibrated a minimum of once per day during field efforts. Instrument calibration was performed in accordance with the manufacturers' recommended procedures using commercially available calibration standards.

Selected soil samples collected during the Supplemental Environmental Field Investigation field activities were submitted for laboratory analysis. Samples were collected per the specifications in the approved SOW.

Samples were collected into sample containers which were pre-cleaned and assembled to USEPA's Protocol "B". The volume of sample collected and the type of container used was determined by the suggested volumes described in SW-846 for the particular analysis.

Immediately upon collection, each sample was properly labeled to prevent misidentification. After labeling, the samples were placed into an appropriate storage container. Samples collected for organic analysis were placed into a storage container with sufficient ice or ice packs to preserve samples during transport to the laboratory. The samples were appropriately packaged in the storage container to minimize the potential for damage during transport. A completed chain-of-custody form was placed in each storage container to accompany the samples to the laboratory.

The sample containers were hand delivered to the mobile laboratory (Mid-America Environmental) on-site for analysis. Strict chain-of-custody procedures were maintained during sample handling. A chain-of-custody program was followed to track the possession and handling of individual samples from time of collection through completion of laboratory analysis. Copies of the chain-of-custody record were retained in the permanent file for proper documentation.

Soil samples were analyzed for VOCs and high fraction total petroleum hydrocarbon (TPH). Analytical results for the soil samples are provided in Section 4.0.

3.3 Installation of Temporary Piezometers

Temporary piezometers installed within the shallow groundwater unit were constructed of 1-inch diameter; polyvinyl chloride (PVC) with flush-threaded joints was placed within the open borehole of each shallow boring (3 in total). Six-foot screen sections were utilized at the bottom of each piezometer. The piezometer material was new, decontaminated well material contained in individually sealed plastic bags.

Upon completion of groundwater sampling, the temporary piezometers were pulled and disposed. The two soil borings inside Building 48 were filled with granular bentonite and the surface concrete was repaired, the boring located north of Building 48, Boring B48N1 was converted to a piezometer (TP-26). This piezometer consisted of two 5-foot sections of prepacked well screen and a 5-foot riser and was installed through the Geoprobe 2-inch diameter rods. The prepack well screen consisted of a ½ inch inner diameter slotted pipe encased in a 1 inch diameter slotted pipe with the inner annulus filled with rounded silica sand. The bottom of the well was placed at 14 feet below ground surface (bgs) and sand was added through the Geoprobe rods. As the rods were removed the well pulled up about two feet, resulting in a total depth of 12 feet bgs. Sand was placed around the outside of the screen to a point six inches above the screen and a eight inch thick layer of bentonite was placed on top of the sand pack. The piezometer was complete at the surface with a flush mounted well box cemented in the concrete drive.

3.4 Groundwater Monitoring

Groundwater monitoring activities were performed within a few hours of the installation of the three soil borings and temporary piezometers. The piezometer subsequently installed at the location of Boring B48N1 (TP-26) was also sampled during the fourth quarter groundwater sampling in December 2002.

Prior to the collection of groundwater samples, each temporary piezometer was purged by removing a minimum of one well casing volume of groundwater with a disposable polyethylene bailer. Piezometer TP-26 was purged by bailing three well volumes. Samples were collected using dedicated, disposable polyethylene bottom-loading bailers using appropriate collection procedures as specified in the SOW.

The sample containers were hand delivered to the mobile laboratory (Mid-America Environmental) on-site for analysis or shipped via overnight courier to Environmental Science Corporation in Mt. Juliet, Tennessee. Samples were shipped to the off-site laboratory so that they were received within 24 hours from the time of shipment. Strict chain-of-custody procedures were maintained during sample handling.

A chain-of-custody program was followed to track the possession and handling of individual samples from time of collection through completion of laboratory analysis. Copies of the chain-of-custody record were retained in the permanent file for proper documentation. Analytical results for the groundwater samples are provided in Section 4.0.

3.5 Soil Boring and Sample Designations

All soil borings installed during the Supplemental Environmental Field Investigation were designated by location and direction from the nearest building. For example, the first soil boring installed north of Building 48 was designated B48N1. The first soil boring installed inside Building 48 was designated B48I1. Soil samples collected from each boring were identified by probe location and sample depth. For example, the soil sample collected from probe B48N1 at a depth of 9 feet bgs was designated as B48N1-9. Groundwater samples collected from temporary piezometers were designated with a "W" at the end of the boring number, i.e. a groundwater sample collected from B48I1was designated B48I1W.

The piezometer installed at the location of Boring B48N1 was identified as TP-26 in keeping with the numbering system established for SWMU No. 17.

4.0 Supplemental Environmental Field Investigation Results

This section discusses the geological, hydrogeological, and chemical analysis results of the Supplemental Environmental Field Investigation and characterizes the nature and extent of hazardous waste/constituent releases at the Site.

Results of the soil boring installation indicated that the subsurface lithology is consistent with that previously described for the site (Harding ESE , 2002a). Copies of the soil boring logs are provided in Appendix A. Copies of the groundwater sampling field record forms are provided in Appendix B and copies of the laboratory analytical reports and chain-of-custody documents are provided in Appendix C.

4.1 Results for SWMU No. 17 Area

Analytical soil data, analytical groundwater data, geological soil boring data, and various field data/measurements were utilized to characterize the nature and extent of any hazardous constituent/waste impacts from the SWMU No. 17.

4.1.1 Analytical Results for Soil Samples from SWMU No. 17 Area

Analytical results for soil samples from the three borings installed in the SWMU No. 17 Area were utilized to assess the southern extent of any impacted soils at this location.

A soil samples was collected from each of the borings (B48N1, B48I1, and B48I2) and submitted for chemical analysis to evaluate any potential impacts to soil at this location. Soil boring locations are displayed in Figure 3-1. Table 4-1 presents a summary of analytical results for constituents detected in the soil samples from the SWMU No. 17 Area.

Soil samples were analyzed for VOCs by Method 8021 and for TPH by Method OA-2. No constituents were detected.

4.1.2 Analytical Results for Groundwater Samples from SWMU No. 17 Area

Analytical results for groundwater samples from the SWMU No. 17 Area were utilized to characterize the southern extent of impacted groundwater from the SWMU No. 17 Area.

Groundwater samples were collected from the three temporary piezometers installed in the area and submitted for chemical analysis to evaluate any potential impacts to groundwater at this location. Soil boring/temporary piezometer locations are displayed in Figure 3-1. Table 4-2 presents a summary of analytical results for constituents detected in the groundwater samples from the SWMU No. 17 Area.

Groundwater samples were analyzed for VOCs by Method 8021 and for TPH by Method OA-2 or TPH Diesel Range Organics (DRO). No constituents were detected during the initial sampling. Two VOCs were detected in piezometer TP-26 during the fourth quarter sampling (December 2002). These compounds, cis-1,2-dichloroethene and tetrachloroethene were detected at levels of 14 ug/L and 3.4 ug/L

which are below the respective ITLs of 70 ug/L and 5 ug/L. The tetrachloroethene detection was J qualified by the laboratory as an estimated value that was below the practical quantitation limits but above the method detection limit.

5.0 Conclusions

The results of the Supplemental Environmental Field Investigation combined with the previous investigative work at SWMU No. 17 and the additional investigative work conducted during the Tract 1 South investigation (Environmental Field Investigation Report for Boeing Tract 1 South, MACTEC, 2003), indicate that the soil and groundwater at SWMU No. 17 have been characterized and the lateral extent of VOC and TPH impact has been established.

VOCs were detected during concurrent Tract 1 South field investigation in the vicinity of Building 41 in both the shallow and deep groundwater. The VOC detections in the vicinity of Building 41 appear to be the result of storage activities in the immediate vicinity of Building 41. Historical aerial photos show numerous drums stored around Building 41. Laboratory analysis from temporary piezometers and monitoring wells located down gradient of SWMU No. 17 and upgradient of Building 41 support the position that migration is not occurring. These sampling points include MW-11S, MW-11I, MW-10S, TP-26, B44N1, B41N1, B41S1, and MW-18. Building 41 is located approximately 1,050 feet east of SWMU No. 17. Also, laboratory analysis from temporary piezometers and monitoring wells on the southern portion of the GKN property (former Boeing Fabrication Operation Facility, Tract 1 North) and north of Building 41 show that migration is not occurring from the former Fabrication Operation Facility site (ESE, 2000). These sampling points include B22E2, B22E3, B27S1, B27S2, B27S3, B41N1, B2N1, and B2N2.

As part of the concurrent Tract 1 South field investigation, a deep piezometer (B48S4D) was installed to the top of bedrock at a depth of 76 feet below ground surface at the southeast corner of Building 48. However, groundwater was not encountered and a sample could not be obtained to asses the potential presence of VOCs in the deep groundwater at that location.

As stated in the 2001 Annual Monitoring Report for SWMU No. 17 (Harding ESE, 2002a), it is suspected that TPH impacts observed at SWMU No. 17 are not solely attributable to MDC sources. Two pipelines run along the north side of Banshee Road for the transport of petroleum products to the airport. Representatives of the St. Louis Pipeline Corporation, the owner of one of the pipelines, were interviewed by Boeing in August 2002. They were not aware of any leakage from their pipeline. St. Louis Pipeline purchased the pipeline in 1994 and replaced the 4-inch line with an 8-inch line. The new line was pressure tested prior to being placed into service. The ownership of the second pipeline is not known. Representatives of St. Louis Pipeline, Phillips, Conoco, and Shell were contacted by Boeing but were unable to provide information regarding this pipeline or ownership of the pipeline.

Underground storage tanks (USTs) that existed on non-MDC property to the west and upgradient of SWMU No. 17 may also have contributed to the TPH impact at SWMU No. 17. Analytical data provided by Lambert-St. Louis International Airport from samples collected by the airport from this area indicate elevated levels of TPH in the soil.

A RCRA Facility Investigation (RFI) report for the entire permitted site, including SWMU No. 17, will be prepared following MDNR's concurrence that the site has been properly

characterized. A risk assessment will be conducted site wide (Tract 1 North and Tract 1 South). Information obtained from the risk assessment will be used to develop clean up levels and help determine appropriate remediation methods.

6.0 References

ESE, Inc. 2000. Phase 2 Environmental Site Assessment Report for Boeing Fabrication Operations Facility, St. Louis, Missouri, November 16, 2000.

Harding ESE, Inc. 2002a. Annual Monitoring Report for SWMU No. 17 McDonnell Douglas, Hazelwood, Missouri Facility, October 29, 2002.

Harding ESE, Inc. 2002b. Environmental Field Investigation Statement of Work for Boeing Tract I South Property Hazelwood, Missouri Facility, September 27, 2002

MACTEC, 2003. Draft Environmental Field Investigation Report for Boeing Tract 1 South Property, January 10, 2003

Missouri Department of Natural Resources. 1997. Part I RCRA Permit, USEPA ID No. MOD000818963, March 5, 1997.

United States Environmental Protection Agency (USEPA) Region VII. 1995. Resource Conservation and Recovery Act (RCRA) Facility Assessment, McDonnell-Douglas Corporation, Hazelwood, Missouri (Prepared by Science Applications International Corporation), April 1995.

Table 4-1
Detected Concentrations in Soil, 2002 Environmental Field Investigation
Boeing Tract 1 South, SWMU No. 17

CONSTITUENT	UNITS	B48I1-7	B48I2-6	B48N1-9	INVESTIGATION THRESHOLD LEVEL (ITL) (1)
		7 ft bgs	6 ft bgs	9 ft bgs	
		11/11/02	11/11/02	11/11/02	
VOCs Method 8021					
		< 5	< 5	<5	
TPH Method OA-2					
		< 5000	< 5000	< 5000	

Notes:

< - Constituents were not detected above the stated quantitation limits.

ft bgs - feet below ground surface

(1) - Environmental Field Investigaion Statement of Work for Boeing Tract 1 South Property, Hazelwood, Missouri Facility, September 27, 2002, Harding ESE, Inc.

Table 4-2
Detected Concentrations in Groundwater, 2002 Environmental Field Investigation
Boeing Tract 1 South, SWMU No. 17

CONSTITUENT	UNITS	B48I1W	B48I2W	B48N1W		INVESTIGATION THRESHOLD LEVEL (ITL) (1)
		11/11/02	11/11/02	11/11/02	12/11/02	
VOCs Method 8021						
Cis-1,2-Dichloroethene	ug/l	<5	<5	<5	**14**	70
Tetrachloroethene	ug/l	<5	<5	<5	**3.4 J**	5
TPH Method OA-2						
		< 1000	< 1000	< 1000	NA	
TPH Method DRO						
TPH (GC/FID) High Fraction	ug/l	NA	NA	NA	**110**	10,000

Notes:

< - Constituents were not detected above the stated quantitation limits.

NA - Constituents were not analyzed

ug/l - micrograms per liter

J - Result is qualified as an estimated value.

(1) - Environmental Field Investigaion Statement of Work for Boeing Tract 1 South Property, Hazelwood, Missouri Facility, September 27, 2002, Harding ESE, Inc.

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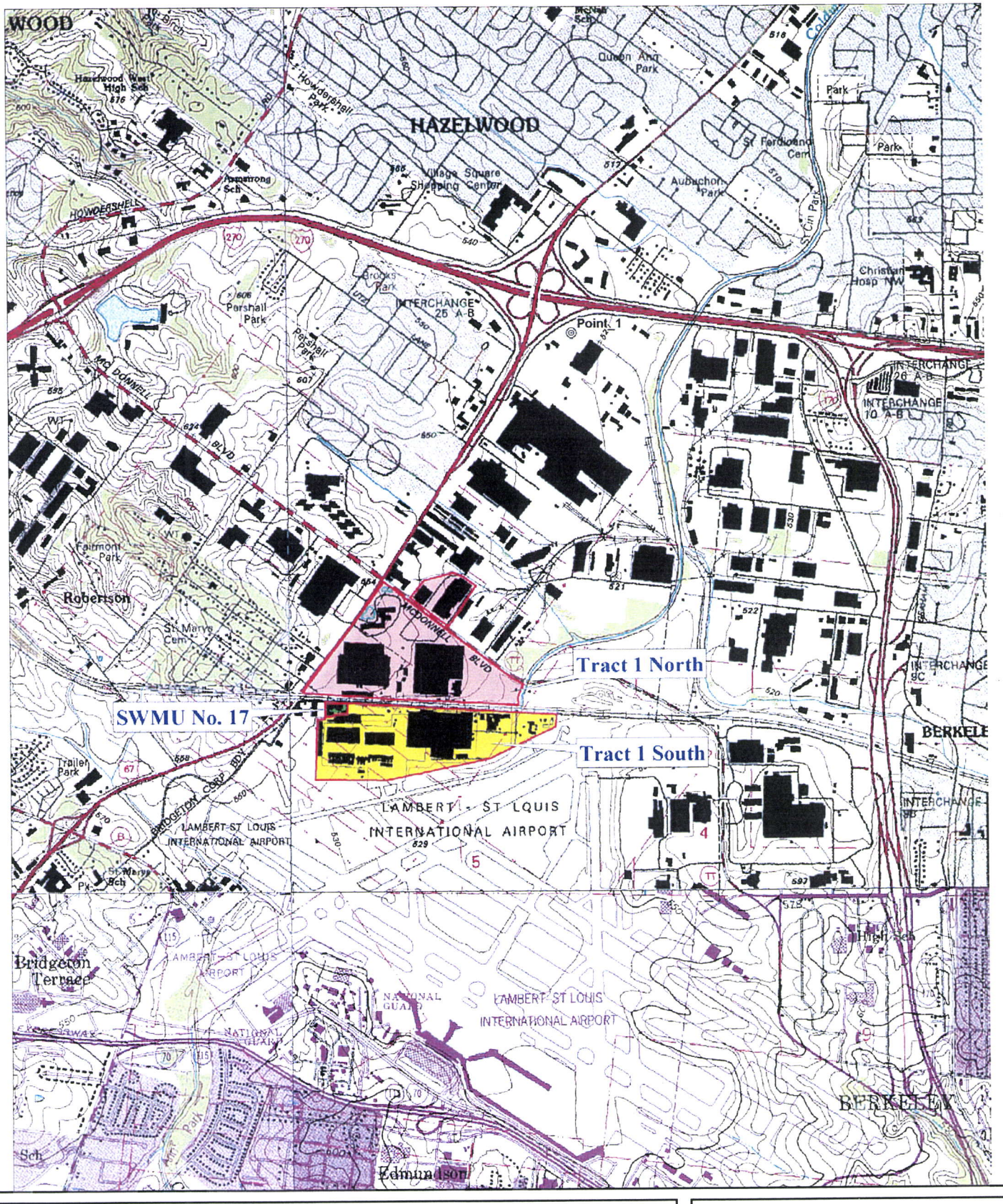

Figure 1-1
FACILITY LOCATION MAP
SWMU NO. 17
BOEING TRACT 1 SOUTH

MACTEC

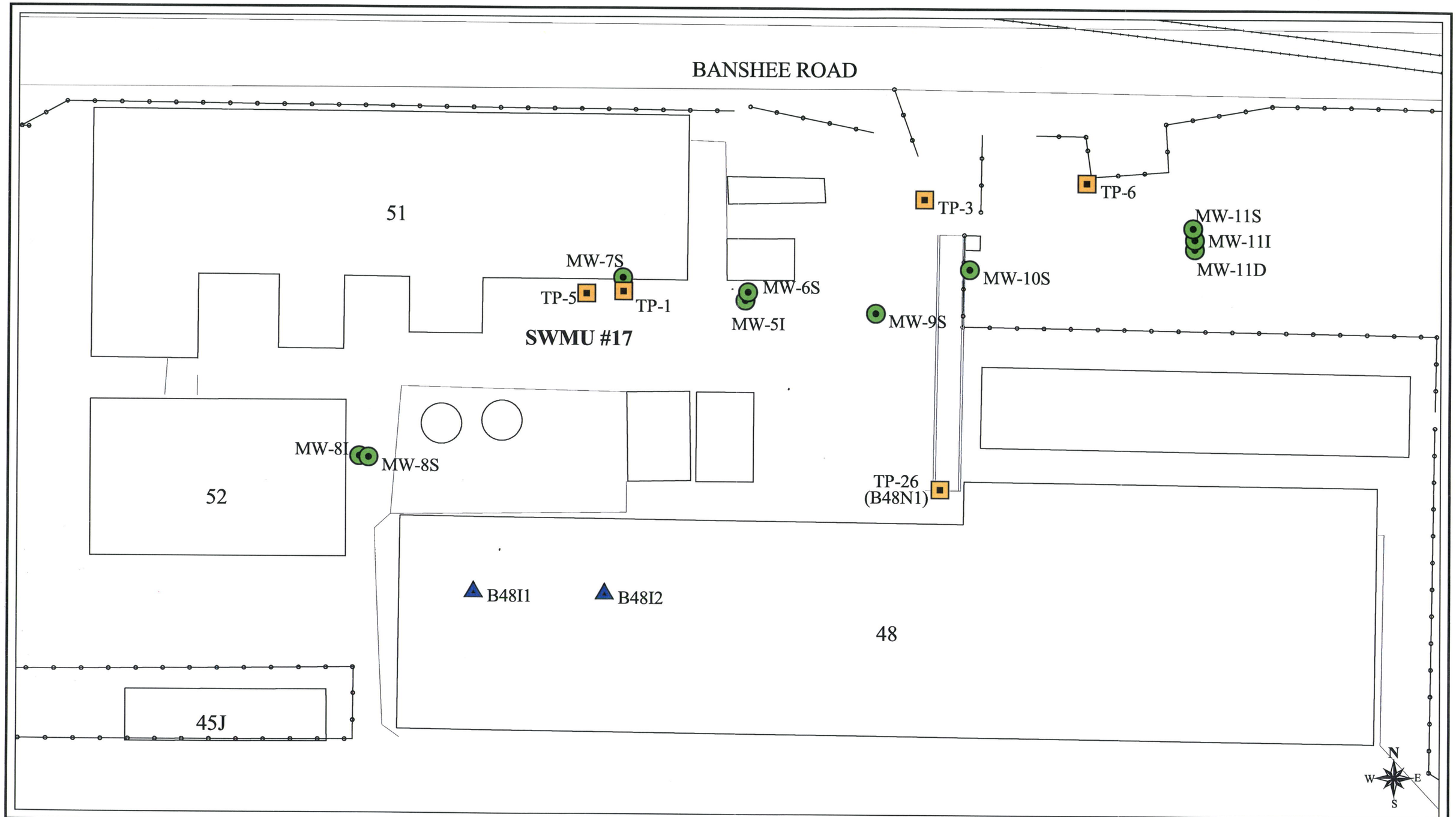

Figure 3-1
Soil Boring and Temporary Piezometer
Locations for SWMU No. 17
Boeing Tract 1 South

Legend

- Soil Boring & Temporary Piezometer
- Piezometer
- Existing Monitoring Well

8 0 8 16 Meters

1:500

MACTEC, Inc.

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Appendix A

Soil Boring Logs

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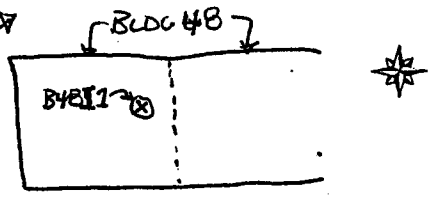
Log of Exploratory Boring

Client: Boeing	Location: Tract I South	Boring No. B48I1
Logged by: J. FRIGSNER		Project No. 510200
Drilled by: Roberts Environmental Drilling		Date: 11/11/02
Drilling Method: GeoProbe		
Sampling Method: 2" macrocore		Sheet 1 of 1
Hole Diameter: 2"		

Field Location: Sumac 17



Total Depth: 16'

Water At:

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test: PID (ppm)	Analysis/Test: Lab Sample Location & ID	Time	USCS Symbol
2		1	24"				
4				0			
6		2	38"	0	~~B48I~~ JCF		
				0	B48I1-7		
8				0			
10		3	30"				
12				0			
14		4	20"	0			
16				0			
18							
20							

Description: 10" Cement, 4" Gravel base ~~0-2' Cement (10")~~ JCF

1-5' MED LIGHT GREYISH TAN CLAYEY SILT/SILTY CLAY, LOW PLASTIC, SLIGHT MOISTURE, MED SOFT TO MED FIRM, FE MOTTLING

5'-7.5' Color change to med greenish grey. Less mottling. Slightly more moisture

7.5-16. DARK BROWN SILT, NONPLASTIC, MED SOFT, SLIGHT MOISTURE. ORGANIC MATTER (WOOD)

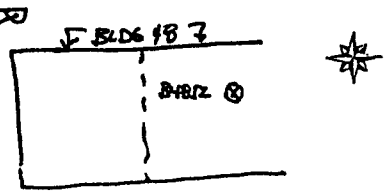
16' BGH

MACTEC

Log of Exploratory Boring

Client: Boeing	Location: Tract I South	Boring No. B4BI2
Logged by:		Project No. 510200
Drilled by: Roberts Environmental Drilling		Date: 11/11/02
Drilling Method: GeoProbe		
Sampling Method: 2" macrocore		Sheet 1 of 1
Hole Diameter: 2"		

Field Location: SWMU 17



Total Depth: 16.

Water At:

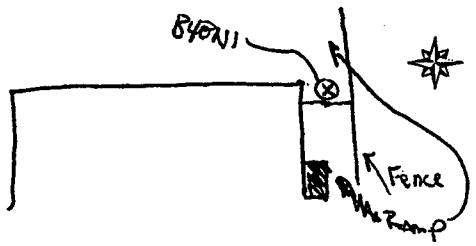
Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test PID (ppm)	Analysis/Test Lab Sample Location & ID	Time	USCS Symbol	Description
								10" cement 10" base
2		1	16"					2'-4' MED LIGHT GREYISH TAN CLAYEY SILT, LOW/NON PLASTIC, MED FIRM, V. LOW MOISTURE (CRUMBLY). Fe MOTTLING
4				0				4'-5' COLOR CHANGE TO GREENISH GREY. SLIGHTLY MORE CLAY. SLIGHT MOISTURE MED SOFT. LESS Fe MOTTLING
6		2	40"	0	B4BI2-6			5'-6' MED GREY ~~CLAY~~ SILTY CLAY, MED PLASTIC, MED LOW MOISTURE, MED SOFT
8				0				6-15' MED DARK - DARK BROWN SILT, LOW/NON PLASTIC, MED LOW MOISTURE MED FIRM. ORGANIC MATTER (WOOD) MOIST around 14ft.
10		3	30"	0				15'-16' MED TAUNISH GREY CLAY / SILTY CLAY med plastic, soft, moderately high moisture.
12				0				
14		4	24"	0				
16				0				16' BOH
18								
20								

MACTEC

Log of Exploratory Boring

Client: Boeing	Location: Tract I South	Boring No. B48N1
Logged by: J. FRIESNER		Project No. 510200
Drilled by: Roberts Environmental Drilling		Date: 11/11/02
Drilling Method: GeoProbe		
Sampling Method: 2" macrocore		Sheet 1 of 1
Hole Diameter: 2"		

Field Location:



Total Depth: 16'

Water At:

Depth (ft.)	Graphic Log	Sampler Location	Sample Recovery (in.)	Analysis/Test: PID (ppm)	Analysis/Test: Lab Sample Location & ID	Time	USCS Symbol
2		1	24"				
4							
6		2	24"				
8							
				0	B48N1-9	1040	
10		3	36"				
12				0			
14			38"	0			
16				0			
18							
20							

Description: 10" cement

10"-9' GREY CRUSHED GRAVEL FILL.

9-12.5' DARK BROWN SILT, NONPLASTIC MOD FIRM, SLIGHT MOISTURE. ORGANIC MATTER (WOOD)

12.5-16 MEDIUM GREENISH GREY CLAY/SILTY CLAY. MED PLASTIC, SOFT, VERY MOIST.

16' BOH

Appendix B

Groundwater Sampling Field Record Forms

MACTEC

TEMPORARY PIEZOMETER GROUNDWATER SAMPLING DATA SHEET

PROJECT # 510200 PROJECT NAME: Boeing Tract 1 South BORING # B48I1

SAMPLED BY: DLB WEATHER: SUNNY MID 40°

Time	Date			
1025	11/11/02	INITIAL WATER LEVEL:	7.4	feet below ground surface
	11/11/02	TOTAL WELL DEPTH:	16	feet below ground surface
		FREE PRODUCT LEVEL:		feet below ground surface
		SUBSEQUENT WATER LEVEL:		feet below ground surface
		SUBSEQUENT WATER LEVEL:		feet below ground surface

SAMPLING METHOD: ☒ DISPOSABLE POLYETHYLENE BAILER
☐ PERISTALTIC PUMP

FRACTION (circle)	SAMPLE TIME	DATE	PRES.	VOLUME COLLECTED	CONTAINER TYPE
VOC	1040	11/11/02	~~HCl~~	2 x 40 ml	40 ml vial
TPH DRO	1040	11/11/02	~~HCl~~	40 ml	1,000 ml amber bottle
PAH			none		1,000 ml amber bottle
TOTAL METALS			HNO3		500 ml plastic bottle
BTEX			HCl		40 ml vial

BAILED DRY: YES ☐ NO ☒

WATER QUALITY OBSERVATIONS: VERY TURBID, DARK BROWN

REMARKS: REMOVED ~1/4 GALLON PRIOR TO SAMPLING

SIGNATURE: DLB DATE: 11/11/02

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MACTEC

TEMPORARY PIEZOMETER GROUNDWATER SAMPLING DATA SHEET

PROJECT # 510200 PROJECT NAME: Boeing Tract 1 South BORING # B48I2

SAMPLED BY: DLB WEATHER: SUNNY, MID 40°

Time	Date			
1110	11/11/02	INITIAL WATER LEVEL:	4.5	feet below ground surface
	11/11/02	TOTAL WELL DEPTH:	16	feet below ground surface
		FREE PRODUCT LEVEL:		feet below ground surface
		SUBSEQUENT WATER LEVEL:		feet below ground surface
		SUBSEQUENT WATER LEVEL:		feet below ground surface

SAMPLING METHOD: ☒ DISPOSABLE POLYETHYLENE BAILER
☐ PERISTALTIC PUMP

FRACTION (circle)	SAMPLE TIME	DATE	PRES.	VOLUME COLLECTED	CONTAINER TYPE
VOC	1125	11/11/02	~~HCl~~	2 x 40 ml	40 ml vial
TPH DRO	1125	11/11/02	~~HCl~~	40 ml	1,000 ml amber bottle
PAH			none		1,000 ml amber bottle
TOTAL METALS			HNO3		500 ml plastic bottle
BTEX			HCl		40 ml vial

BAILED DRY: YES ☐ NO ☒

WATER QUALITY OBSERVATIONS: TURBID, DARK GRAY

REMARKS: DID NOT BAIL DOWN MUCH, REMOVED 1/2 GALLON PRIOR TO SAMPLING

SIGNATURE: D. R. DATE: 11/11/02

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MACTEC

TEMPORARY PIEZOMETER GROUNDWATER SAMPLING DATA SHEET

PROJECT # 510200 PROJECT NAME: Boeing Tract 1 South BORING # B4BU1

SAMPLED BY: JLT/DLB WEATHER: Partly cloudy, cool/cold

Time	Date			
1340	11/11/02	INITIAL WATER LEVEL:	7.4	feet below ground surface
		TOTAL WELL DEPTH:		feet below ground surface
		FREE PRODUCT LEVEL:		feet below ground surface
		SUBSEQUENT WATER LEVEL:		feet below ground surface
		SUBSEQUENT WATER LEVEL:		feet below ground surface

SAMPLING METHOD: ☒ DISPOSABLE POLYETHYLENE BAILER
☐ PERISTALTIC PUMP

FRACTION (circle)	SAMPLE TIME	DATE	PRES.	VOLUME COLLECTED	CONTAINER TYPE
VOC	1505	11/11/02	~~HCl~~ none	40 ml	40 ml vial ~~1,000 ml amber bottle~~ 40 ml vial
TPH DRO	1505	11/11/02	~~HCl~~ none	40 ml	1,000 ml amber bottle
PAH			none		500 ml plastic bottle
TOTAL METALS			HNO3		40 ml vial
BTEX			HCl		

BAILED DRY: YES ☒ NO ☐

WATER QUALITY OBSERVATIONS: Slightly turbid, light tan color.

REMARKS:

SIGNATURE: [signature] DATE: 11/11/02

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~~MB~~ 1288 Samples

MACTEC

Well Purging/Sampling Record

Project Name: Boeing SWMU17

Date: 12/11/02

Well Number: ~~FB3~~ B48N1

Project Number: 517042

Start Time: 1218

Low Flow Sampling? YES (NO)

Field Team: RLG

Weather/ Conditions: Cool Low 40's / Sunny

Sampling Method: (DDB) BP PP

(DDB = Dedicated Disposable Bailer, BP = Bladder Pump, PP = Peristaltic Pump)

Well Depth: 12 ft. BTOC Initial Water Level: 6.40 ft. BTOC Water Column: _____ ft. Well Volume: _____ gal Purge Volume: _____ gal

(1" = 0.041 gal/ft., 2" = 0.163 gal/ft., 4" = 0.653 gal/ft., 6" = 1.47 gal/ft.)

Time	Volume Removed (gal or mL)	Water Level (ft BTOC)	Temperature (deg. C)	pH (standard units)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Iron II (mg/L)	Water Condition	Comments
1220			6.8	7.65	.49	11.64				
1236	Aprx .2gal		11.2	6.96	1.72	9.25				
1249	Aprx .3gal		8.8	6.96	1.42	10.46				
1300			SAMPLES COLLECTED (circle appropriate types): (VOC) Total Metals Dissolved Metals (TPH) PCB Lab Bio Cr+6							

Bladder Pump Settings: Pressure Time _____ sec Exhaust Time _____ sec Pressure _____ psi

Final Water Level: _____ ft. b. toc Signature: [signature] Date: 12/11/02 Page 1 of 1

Appendix C

Analytical Laboratory Reports and Chain-of-Custody Forms

MID-AMERICA
ENVIRONMENTAL

December 5, 2002

Mr. Dennis Brinkley
MACTEC
3199 Riverport Tech Center Drive
St. Louis, MO 63043

SUBJECT: DATA REPORT – MACTEC Project #510200
Boeing
Tract 1 South
St. Louis MO

Mid-America Environmental Project # 021107W1

Mr. Brinkley;
Enclosed, please find the data report for the above referenced location. The soil and water samples were analyzed in Mid-America Environmental's laboratory using appropriate methods and equipment.

Project Summary

The following analyses were conducted:

- 22 soils for EPA Method 8021
- 24 waters for EPA Method 8021
- 16 soils for Iowa Method OA-1
- 32 soils for Iowa Method OA-2
- 19 waters for Iowa Method OA-1
- 36 waters for Iowa Method OA-2

The samples were received in appropriate containers with appropriate labels, seals, and chain-of-custody documentation.

Project Narrative

The results for all analyses and required QA/QC analyses are summarized in the enclosed tables. All calibrations, blanks, and spike recoveries fulfill quality control criteria.

Mid-America Environmental appreciates the opportunity to provide analytical services to MACTEC on this project. If you have any questions relating to this data or report, please do not hesitate to contact us.

Sincerely,

Mr. Hermon Atkinson
President

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

IOWA METHODS OA2 ANALYSES OF SOILS

SAMPLE NUMBER	DATE ANALYZED	STODDARD SOLVENT (mg/kg)	KEROSENE (mg/kg)	DIESEL #1 (mg/kg)	DIESEL #2 (mg/kg)	MOTOR OIL (mg/kg)
METHOD BLANK	11/7/02	ND	ND	ND	ND	ND
METHOD BLANK	11/8/02	ND	ND	ND	ND	ND
METHOD BLANK	11/11/02	ND	ND	ND	ND	ND
METHOD BLANK	11/12/02	ND	ND	ND	ND	ND
METHOD BLANK	11/13/02	ND	ND	ND	ND	ND
METHOD BLANK	11/14/02	ND	ND	ND	ND	ND
B41S1-6	11/7/02	ND	ND	ND	ND	ND
B41S1-6 DUP	11/7/02	ND	ND	ND	ND	ND
B41S2-4'	11/7/02	ND	ND	ND	ND	ND
B41S3D-4	11/7/02	ND	ND	ND	24	ND
B2W1-6'	11/8/02	ND	ND	ND	47	ND
B41N1-8'	11/8/02	ND	ND	ND	ND	ND
B44N1-9	11/8/02	ND	ND	ND	ND	ND
B48I1-7	11/11/02	ND	ND	ND	ND	ND
B48I2-6	11/11/02	ND	ND	ND	ND	ND
B48N1-9	11/11/02	ND	ND	ND	ND	ND
B41E1-10	11/12/02	ND	ND	ND	ND	ND
B41S4-6	11/13/02	ND	ND	ND	ND	ND
B40E1-6	11/14/02	ND	ND	ND	ND	ND
B40E2-6	11/14/02	ND	ND	ND	ND	ND
B40S1-6	11/14/02	ND	ND	ND	ND	ND
B40W1-6	11/14/02	ND	ND	ND	ND	ND
B40S2-6	11/14/02	ND	ND	ND	ND	ND
DETECTION LIMITS		5	5	5	5	5

ND INDICATES NOT DETECTED AT LISTED DETECTION LIMITS

ANALYSES PERFORMED BY: H. Atkinson

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

IOWA METHODS OA2 ANALYSES OF WATERS

SAMPLE NUMBER	DATE ANALYZED	STODDARD SOLVENT (ug/L)	KEROSENE (ug/L)	DIESEL #1 (ug/L)	DIESEL #2 (ug/L)	MOTOR OIL (ug/L)
METHOD BLANK	11/7/02	ND	ND	ND	ND	ND
METHOD BLANK	11/8/02	ND	ND	ND	ND	ND
METHOD BLANK	11/11/02	ND	ND	ND	ND	ND
METHOD BLANK	11/12/02	ND	ND	ND	ND	ND
METHOD BLANK	11/13/02	ND	ND	ND	ND	ND
METHOD BLANK	11/14/02	ND	ND	ND	ND	ND
B41S1W	11/7/02	ND	ND	ND	ND	ND
B41S2W	11/7/02	ND	ND	ND	ND	ND
B41N1W	11/8/02	ND	ND	ND	ND	ND
B41S3DW	11/8/02	ND	ND	ND	ND	ND
B48I1W	11/11/02	ND	ND	ND	ND	ND
B48I2W	11/11/02	ND	ND	ND	ND	ND
B44N1W	11/11/02	ND	ND	ND	ND	ND
B44N1W DUP	11/11/02	ND	ND	ND	ND	ND
B48N1W	11/11/02	ND	ND	ND	ND	ND
B41E1W	11/12/02	ND	ND	ND	ND	ND
B41S4W	11/13/02	ND	ND	ND	ND	ND
B41E1D	11/13/02	ND	ND	ND	ND	ND
MW 18	11/14/02	ND	ND	ND	ND	ND
B40E1W	11/14/02	ND	ND	ND	ND	ND
B40E2W	11/14/02	ND	ND	ND	ND	ND
B40S1W	11/14/02	ND	ND	ND	ND	ND
B40S2W	11/14/02	ND	ND	ND	ND	ND
B40W1W	11/14/02	ND	ND	ND	ND	ND
DETECTION LIMITS		1,000	1,000	1,000	1,000	1,000

ND INDICATES NOT DETECTED AT LISTED DETECTION LIMITS

ANALYSES PERFORMED BY: W. Robb

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

Data Reported in ug/Kg

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) SOIL ANALYSES

Sample ID	B48I1-7'	B48I2-6'	B48N1-9'	B2N1-8'	B2N3-8'	B2N2-8'	B41E1-10'	B2N4-6'	B41S4-6'
Date	11/11/02	11/11/02	11/11/02	11/11/02	11/12/02	11/12/02	11/12/02	11/13/02	11/13/02
DICHLORODIFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
VINYL CHLORIDE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
BROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
TRICHLOROFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
METHYLENE CHLORIDE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
TRANS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-DICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CIS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
BROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROFORM	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CARBON TETRACHLORIDE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2 DICHLOROETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
TRICHLOROETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
BROMODICHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CIS -1,3 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
TOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
TRANS-1,3-DICHLORO PROPENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	1.9	<1.0	<1.0	1.4	<1.0
TETRACHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
DIBROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2 DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
CHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
ETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-XYLENES	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
STYRENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-XYLENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
BROMOFORM	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
ISOPROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
BROMOBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3 TRICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-PROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-BUTYL BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-ISOPROPYLTOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2 DIBROMO 3 CHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
HEXACHLOROBUTADIENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
NAPHTHALENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-BROMOCHLOROBENZENE	81.2%	73.7%	72.8%	108.1%	114.3%	93.3%	62.5%	121.8%	117.[illegible]
1,4 - DICHLOROBUTANE	37.2%	96.4%	57.1%	118.3%	111.5%	108.7%	78.1%	112.9%	103.[illegible]

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

Data Reported in ug/Kg

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) SOIL ANALYSES

Sample ID	BLANK	B41S1-6	B41S2-4	B41S1-6 DUP	B41S3D-4'	B2W1-6'	B41N1-8'	B2I1-8'	B44N1-9'
Date	11/7/02	11/7/02	11/7/02	11/7/02	11/7/02	11/8/02	11/8/02	11/8/02	11/8/02
DICHLORODIFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
VINYL CHLORIDE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOMETHANE	<10	<10	<5.0	<5.0	<5.0	6.7	<5.0	<5.0	<5.0
CHLOROETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TRICHLOROFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
METHYLENE CHLORIDE	<35	<30	<22	<17	<50	<25	<25	<25	<35
TRANS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-DICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CIS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROFORM	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CARBON TETRACHLORIDE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	18	21	186	<5.0	41
BENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DICHLOROETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TRICHLOROETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMODICHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CIS -1,3 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TOLUENE	<5.0	<5.0	<5.0	<5.0	26	6.0	<5.0	<5.0	<5.0
TRANS-1,3-DICHLORO PROPENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TETRACHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
DIBROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	10	<5.0	<5.0	29	<5.0
ETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	27	41	21	43	11
m&p-XYLENES	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
STYRENE	<5.0	<5.0	<5.0	<5.0	<5.0	12	<5.0	<5.0	<5.0
o-XYLENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOFORM	<5.0	<5.0	<5.0	<5.0	29	31	11	292	<5.0
ISOPROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3 TRICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	30	<5.0	<5.0	13
n-PROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	192	36	<5.0	66	<5.0
1,3,5 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<5.0	35	<5.0	73	<5.0
tert-BUTYL BENZENE	<5.0	<5.0	<5.0	<5.0	51	<5.0	<5.0	<5.0	<5.0
1,2,4 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	127	75	<5.0	7.2
sec-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	116	36	<5.0	268	7.1
p-ISOPROPYLTOLUENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	14	<5.0	80	<5.0
n-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DIBROMO 3 CHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,4 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
HEXACHLOROBUTADIENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
NAPHTHALENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-BROMOCHLOROBENZENE	97.6%	85.5%	105.2%	106.1%	121.4%	119.6%	107.0%	104.3%	102.9%
1,4 - DICHLOROBUTANE	96.6%	81.9%	94.7%	71.8%	81.0%	84.8%	86.2%	83.5%	114.4%

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

Data Reported in ug/l

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) WATER ANALYSES

Sample ID	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK
Date	11/7/02	11/8/02	11/11/02	11/12/02	11/13/02	11/14/02
DICHLORODIFLUOROMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
CHLOROMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
VINYL CHLORIDE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
BROMOMETHANE	<10	<5.0	<5.0	<1.0	<1.0	<1.0
CHLOROETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
TRICHLOROFLUOROMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1-DICHLORO ETHENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
METHYLENE CHLORIDE	<35	<25	<10	<1.0	<1.0	<21
TRANS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1-DICHLORO ETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
CIS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
2,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
BROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
CHLOROFORM	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1,1-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
CARBON TETRACHLORIDE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1 DICHLOROPROPENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
BENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2 DICHLOROETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
TRICHLOROETHENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
DIBROMOMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
BROMODICHLOROMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
CIS -1,3 DICHLOROPROPENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
TOLUENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
TRANS-1,3-DICHLORO PROPENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1,2-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
TETRACHLORO ETHENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,3 DICHLOROPROPANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
DIBROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2 DIBROMOMETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
CHLOROBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1,1,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
ETHYLBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
m&p-XYLENES	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
STYRENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
o-XYLENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
BROMOFORM	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
ISOPROPYL BENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1,2,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
BROMOBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2,3 TRICHLOROPROPANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
n-PROPYL BENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
2-CHLOROTOLUENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,3,5 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
4-CHLOROTOLUENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
tert-BUTYL BENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2,4 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
sec-BUTYLBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,3 DICHLOROBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
p-ISOPROPYLTOLUENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,4 DICHLOROBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
n-BUTYLBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2 DICHLOROBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2 DIBROMO 3 CHLOROPROPANE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2,4 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
HEXACHLOROBUTADIENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
NAPHTHALENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,2,3 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
4-BROMOCHLOROBENZENE	97.6%	88.1%	89.0%	not added	118.2%	107.1%
1,4 - DICHLOROBUTANE	96.6%	83.5%	91.9%	not added	109.8%	78.0%

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

Data Reported in ug/L

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) WATER ANALYSES

Sample ID	BLANK	B41S1W	B41S2W	B2W1W	B41N1W	B41S3DW	B2I1W	B44N1W	B44N1W DUP
Date	11/7/02	11/7/02	11/7/02	11/8/02	11/8/02	11/8/02	11/11/02	11/11/02	11/11/02
DICHLORODIFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
VINYL CHLORIDE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.6	<5.0	<5.0
BROMOMETHANE	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROETHANE	<5.0	<5.0	<5.0	7.3	<5.0	<5.0	<5.0	<5.0	<5.0
TRICHLOROFLUOROMETHANE	<5.0	<5.0	<5.0	17	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
METHYLENE CHLORIDE	<35	<25	<25	<25	<25	<25	<5.0	<5.0	<5.0
TRANS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-DICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CIS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	16	<5.0	<5.0	<5.0
2,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROFORM	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CARBON TETRACHLORIDE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BENZENE	<5.0	<5.0	<5.0	6.3	135	<5.0	<5.0	<5.0	<5.0
1,2 DICHLOROETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TRICHLOROETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMODICHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CIS -1,3 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TOLUENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TRANS-1,3-DICHLORO PROPENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	125	<5.0	<5.0	<5.0
TETRACHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
DIBROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
ETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
m&p-XYLENES	<5.0	<5.0	<5.0	<5.0	31	<5.0	<5.0	<5.0	<5.0
STYRENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-XYLENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOFORM	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
ISOPROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	24	<5.0	<5.0	<5.0	<5.0
1,1,2,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3 TRICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
n-PROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	117	<5.0	<5.0	<5.0	<5.0
2-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3,5 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tert-BUTYL BENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,4 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	13	<5.0	<5.0	<5.0	<5.0
sec-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	41	<5.0	<5.0	<5.0	<5.0
1,3 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
p-ISOPROPYLTOLUENE	<5.0	<5.0	<5.0	<5.0	68	<5.0	<5.0	<5.0	<5.0
1,4 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
n-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2 DIBROMO 3 CHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,4 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
HEXACHLOROBUTADIENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
NAPHTHALENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-BROMOCHLOROBENZENE	97.6%	79.6%	104.1%	89.3%	99.5%	92.0%	89.5%	88.1%	78.2%
1,4 - DICHLOROBUTANE	96.6%	92.2%	83.5%	74.0%	89.5%	83.9%	99.8%	94.0%	87.0%

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

MACTEC
Project # 510200
Boeing
Tract 1 South
St. Louis, MO

Mid-America Environmental Project #021107W1

Data Reported in ug/L

VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) WATER ANALYSES

Sample ID	B48I1W	B48I2W	B48N1W	B2N1W	B2N3W	B2N3W DUP	B2N2W	B41E1W	B2N4W
Date	11/11/02	11/11/02	11/11/02	11/11/02	11/12/02	11/12/02	11/12/02	11/12/02	11/13/02
DICHLORODIFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
CHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
VINYL CHLORIDE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
BROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
CHLOROETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
TRICHLOROFLUOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
METHYLENE CHLORIDE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	1.7
TRANS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	12	12	<1.0	<1.0	<1.0
1,1-DICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	1.2	19
CIS-1,2-DICHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	45	39	<1.0	<1.0	<1.0
2,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
BROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
CHLOROFORM	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1,1-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
CARBON TETRACHLORIDE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2 DICHLOROETHANE	<5.0	<5.0	<5.0	<5.0	11	10	<1.0	1.2	2.5
TRICHLOROETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
BROMODICHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
CIS -1,3 DICHLOROPROPENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
TOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
TRANS-1,3-DICHLORO PROPENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1,2-TRICHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	23	21	<1.0	<1.0	13
TETRACHLORO ETHENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,3 DICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
DIBROMOCHLOROMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2 DIBROMOMETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
CHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1,1,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
ETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
m&p-XYLENES	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
STYRENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
o-XYLENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
BROMOFORM	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
ISOPROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1,2,2-TETRACHLORO ETHANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
BROMOBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2,3 TRICHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
n-PROPYL BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
2-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,3,5 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
4-CHLOROTOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
tert-BUTYL BENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2,4 TRIMETHYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
sec-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,3 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
p-ISOPROPYLTOLUENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,4 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
n-BUTYLBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2 DICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2 DIBROMO 3 CHLOROPROPANE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2,4 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
HEXACHLOROBUTADIENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
NAPHTHALENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2,3 TRICHLOROBENZENE	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
4-BROMOCHLOROBENZENE	82.1%	99.9%	85.8%	76.4%	62.3%	108.8%	84.9%	94.0%	92.4%
1,4 - DICHLOROBUTANE	96.1%	112.6%	103.0%	87.4%	55.1%	106.4%	75.9%	80.9%	79.[illegible]

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

WATER MS/MSD REPORT

DATE: 11/10/02

Mid-America Environmental Project #021107W1

COMPOUND	MATRIX SPIKE CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	MATRIX SPIKE DUP CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	%RSD
DICHLORODIFLUOROMETHANE	25	23.3	93.2%	25	23.2	92.8%	0.4%
CHLOROMETHANE	25	31.0	123.9%	25	30.3	121.2%	2.2%
VINYL CHLORIDE	25	25.3	101.2%	25	24.9	99.6%	1.6%
BROMOMETHANE	25	27.9	111.6%	25	26.8	107.2%	4.0%
CHLOROETHANE	25	27.9	111.6%	25	26.3	105.2%	5.9%
TRICHLOROFLUOROMETHANE	25	27.9	111.6%	25	26.0	104.0%	7.1%
1,1-DICHLORO ETHENE	25	26.7	106.8%	25	27.0	107.9%	1.0%
METHYLENE CHLORIDE	25	44.4	177.6%	25	40.4	161.6%	9.4%
TRANS-1,2-DICHLORO ETHENE	25	28.0	111.8%	25	27.1	108.4%	3.1%
1,1-DICHLORO ETHANE	25	27.4	109.6%	25	27.7	110.8%	1.1%
CIS-1,2-DICHLORO ETHENE	25	27.9	111.6%	25	29.3	117.2%	4.9%
BROMOCHLOROMETHANE	25	27.9	111.6%	25	29.1	116.4%	4.2%
CHLOROFORM	25	28.9	115.6%	25	29.7	118.8%	2.7%
2,2 DICHLOROPROPANE	25	20.3	81.2%	25	21.6	86.4%	6.2%
1,2 DICHLOROETHANE	25	28.7	114.8%	25	29.2	116.8%	1.7%
1,1,1-TRICHLORO ETHANE	25	25.9	103.6%	25	26.4	105.6%	1.9%
1,1 DICHLOROPROPENE	25	28.3	113.2%	25	28.5	114.0%	0.7%
CARBON TETRACHLORIDE	25	28.6	114.4%	25	28.7	114.8%	0.3%
BENZENE	25	25.8	103.2%	25	26.3	105.2%	1.9%
DIBROMOMETHANE	25	28.6	114.4%	25	29.3	117.2%	2.4%
1,2 DICHLOROPROPANE	25	28.1	112.4%	25	30.1	120.4%	6.9%
TRICHLOROETHENE	25	28.0	112.0%	25	29.0	115.8%	3.4%
BROMODICHLOROMETHANE	25	26.8	107.1%	25	26.5	106.0%	1.1%
CIS -1,3 DICHLOROPROPENE	25	28.2	112.8%	25	28.1	112.4%	0.4%
TOLUENE	25	21.6	86.4%	25	21.4	85.6%	0.9%
TRANS-1,3-DICHLORO PROPENE	25	24.5	98.0%	25	25.1	100.4%	2.4%
1,1,2-TRICHLORO ETHANE	25	27.7	110.8%	25	28.8	115.2%	3.9%
1,3 DICHLOROPROPANE	25	28.1	112.4%	25	29.5	118.0%	4.9%
DIBROMOCHLOROMETHANE	25	27.9	111.6%	25	29.6	118.4%	5.9%
1,2 DIBROMOMETHANE	25	27.2	108.8%	25	29.1	116.4%	6.7%
TETRACHLORO ETHENE	25	28.1	112.4%	25	28.4	113.6%	1.1%
1,1,1,2-TETRACHLORO ETHANE	25	30.0	120.0%	25	29.1	116.4%	3.0%
CHLOROBENZENE	25	22.5	90.0%	25	25.8	103.2%	13.7%

MID-AMERICA ENVIRONMENTAL

WATER MS/MSD REPORT

DATE: 11/10/02

Mid-America Environmental Project #021107W1

COMPOUND	MATRIX SPIKE CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	MATRIX SPIKE DUP CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	%RSD
ETHYLBENZENE	25	25.8	103.2%	25	26.2	104.8%	1.5%
m&p-XYLENES	50	48.1	96.2%	50	48.7	97.4%	1.2%
STYRENE	25	27.1	108.4%	25	27.4	109.6%	1.1%
o-XYLENE	25	24.5	98.0%	25	23.0	91.8%	6.5%
BROMOFORM	25	28.4	113.6%	25	29.1	116.4%	2.4%
ISOPROPYL BENZENE	25	28.3	113.2%	25	28.6	114.4%	1.1%
1,1,2,2-TETRACHLORO ETHANE	25	28.0	112.0%	25	29.6	118.4%	5.6%
1,2,3 TRICHLOROPROPANE	25	27.7	110.8%	25	28.1	112.4%	1.4%
BROMOBENZENE	25	27.4	109.6%	25	27.1	108.4%	1.1%
n-PROPYL BENZENE	25	26.0	104.0%	25	25.3	101.2%	2.7%
2-CHLOROTOLUENE	25	27.5	110.0%	25	27.9	111.6%	1.4%
1,3,5 TRIMETHYLBENZENE	25	28.6	114.4%	25	28.3	113.2%	1.1%
4-CHLOROTOLUENE	25	25.0	100.0%	25	25.8	103.2%	3.1%
tert-BUTYL BENZENE	25	27.8	111.2%	25	28.4	113.6%	2.1%
1,2,4 TRIMETHYLBENZENE	25	26.6	106.4%	25	26.9	107.6%	1.1%
sec-BUTYLBENZENE	25	27.5	110.0%	25	27.3	109.2%	0.7%
1,3 DICHLOROBENZENE	25	27.1	108.4%	25	26.5	106.0%	2.2%
p-ISOPROPYLTOLUENE	25	30.3	121.2%	25	30.1	120.4%	0.7%
1,4 DICHLOROBENZENE	25	24.4	97.6%	25	24.8	99.2%	1.6%
n-BUTYLBENZENE	25	28.3	113.2%	25	27.6	110.4%	2.5%
1,2 DICHLOROBENZENE	25	28.8	115.2%	25	27.8	111.2%	3.5%
1,2 DIBROMO 3 CHLOROPROPANE	25	25.1	100.4%	25	26.3	105.2%	4.7%
1,2,4 TRICHLOROBENZENE	25	23.1	92.4%	25	23.3	93.2%	0.9%
HEXACHLOROBUTADIENE	25	30.5	122.0%	25	31.1	124.4%	1.9%
NAPHTHALENE	25	22.1	88.4%	25	24.2	96.8%	9.1%
1,2,3 TRICHLOROBENZENE	25	22.2	88.8%	25	20.9	83.6%	6.0%

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

SOIL MS/MSD REPORT

DATE: 11/10/02

Mid-America Environmental Project #021107W1

COMPOUND	MATRIX SPIKE CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	MATRIX SPIKE DUP CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	%RSD
DICHLORODIFLUOROMETHANE	25	23.1	92.4%	25	22.6	90.4%	2.2%
CHLOROMETHANE	25	30.5	122.0%	25	30.6	122.4%	0.3%
VINYL CHLORIDE	25	26.6	106.4%	25	26.4	105.6%	0.8%
BROMOMETHANE	25	22.9	91.6%	25	21.8	87.2%	4.9%
CHLOROETHANE	25	27.9	111.6%	25	26.4	105.6%	5.5%
TRICHLOROFLUOROMETHANE	25	25.5	102.0%	25	24.0	95.9%	6.1%
1,1-DICHLORO ETHENE	25	26.4	105.6%	25	25.5	102.0%	3.5%
METHYLENE CHLORIDE	25	62.3	249.2%	25	50.1	200.4%	21.7%
TRANS-1,2-DICHLORO ETHENE	25	28.7	114.8%	25	27.9	111.6%	2.8%
1,1-DICHLORO ETHANE	25	29.4	117.6%	25	27.5	110.0%	6.7%
CIS-1,2-DICHLORO ETHENE	25	30.5	122.0%	25	28.8	115.2%	5.7%
BROMOCHLOROMETHANE	25	30.8	123.2%	25	28.0	112.0%	9.5%
CHLOROFORM	25	30.5	122.0%	25	28.1	112.4%	8.2%
2,2 DICHLOROPROPANE	25	26.4	105.6%	25	21.1	84.4%	22.3%
1,2 DICHLOROETHANE	25	29.7	118.8%	25	27.8	111.2%	6.6%
1,1,1-TRICHLORO ETHANE	25	27.3	109.2%	25	27.1	108.4%	0.7%
1,1 DICHLOROPROPENE	25	27.1	108.4%	25	27.9	111.6%	2.9%
CARBON TETRACHLORIDE	25	34.1	136.4%	25	27.8	111.2%	20.4%
BENZENE	25	25.8	103.2%	25	25.9	103.6%	0.4%
DIBROMOMETHANE	25	29.7	118.8%	25	27.1	108.4%	9.2%
1,2 DICHLOROPROPANE	25	30.7	122.8%	25	29.4	117.6%	4.3%
TRICHLOROETHENE	25	27.5	110.0%	25	29.3	117.2%	6.3%
BROMODICHLOROMETHANE	25	31.7	126.8%	25	30.7	122.8%	3.2%
CIS -1,3 DICHLOROPROPENE	25	25.6	102.4%	25	24.9	99.6%	2.8%
TOLUENE	25	22.8	91.2%	25	22.2	88.8%	2.7%
TRANS-1,3-DICHLORO PROPENE	25	17.4	69.6%	25	19.8	79.2%	12.9%
1,1,2-TRICHLORO ETHANE	25	29.7	118.8%	25	28.5	114.0%	4.1%
1,3 DICHLOROPROPANE	25	28.2	112.8%	25	28.5	114.0%	1.1%
DIBROMOCHLOROMETHANE	25	29.1	116.4%	25	29.5	118.0%	1.4%
1,2 DIBROMOMETHANE	25	26.3	105.2%	25	28.1	112.4%	6.6%
TETRACHLORO ETHENE	25	29.3	117.2%	25	29.8	119.2%	1.7%
1,1,1,2-TETRACHLORO ETHANE	25	30.8	123.2%	25	28.8	115.2%	6.7%
CHLOROBENZENE	25	26.9	107.6%	25	26.1	104.4%	3.0%

MID-AMERICA ENVIRONMENTAL

SOIL MS/MSD REPORT

DATE: 11/10/02

Mid-America Environmental Project #021107W1

COMPOUND	MATRIX SPIKE CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	MATRIX SPIKE DUP CONC. SPIKED	CONC. RECOVERED	PERCENT RECOVERY	%RSD
ETHYLBENZENE	25	26.9	107.6%	25	25.5	102.0%	5.3%
m&p-XYLENES	50	49.8	99.6%	50	47.6	95.2%	4.5%
STYRENE	25	27.2	108.8%	25	26.0	103.8%	4.7%
o-XYLENE	25	29.2	116.8%	25	24.9	99.6%	15.9%
BROMOFORM	25	27.8	111.2%	25	29.0	116.0%	4.2%
ISOPROPYL BENZENE	25	29.2	116.8%	25	27.3	109.2%	6.7%
1,1,2,2-TETRACHLORO ETHANE	25	27.1	108.4%	25	27.3	109.2%	0.7%
1,2,3 TRICHLOROPROPANE	25	25.9	103.6%	25	27.3	109.2%	5.3%
BROMOBENZENE	25	29.1	116.4%	25	30.3	121.2%	4.0%
n-PROPYL BENZENE	25	28.6	114.4%	25	24.7	98.8%	14.6%
2-CHLOROTOLUENE	25	28.9	115.6%	25	29.7	118.8%	2.7%
1,3,5 TRIMETHYLBENZENE	25	27.3	109.2%	25	27.2	108.8%	0.4%
4-CHLOROTOLUENE	25	28.2	112.8%	25	28.7	114.8%	1.8%
tert-BUTYL BENZENE	25	28.0	111.9%	25	27.1	108.4%	3.2%
1,2,4 TRIMETHYLBENZENE	25	27.1	108.4%	25	27.9	111.6%	2.9%
sec-BUTYLBENZENE	25	29.0	116.0%	25	29.6	118.4%	2.0%
1,3 DICHLOROBENZENE	25	22.5	90.0%	25	23.0	92.0%	2.2%
p-ISOPROPYLTOLUENE	25	28.1	112.4%	25	27.2	108.8%	3.3%
1,4 DICHLOROBENZENE	25	27.4	109.6%	25	27.9	111.6%	1.8%
n-BUTYLBENZENE	25	28.4	113.6%	25	27.4	109.6%	3.6%
1,2 DICHLOROBENZENE	25	28.4	113.6%	25	28.2	112.8%	0.7%
1,2 DIBROMO 3 CHLOROPROPANE	25	23.4	93.6%	25	25.8	103.2%	9.8%
1,2,4 TRICHLOROBENZENE	25	22.3	89.2%	25	24.6	98.4%	9.8%
HEXACHLOROBUTADIENE	25	30.9	123.6%	25	32.1	128.4%	3.8%
NAPHTHALENE	25	20.1	80.4%	25	17.7	70.8%	12.7%
1,2,3 TRICHLOROBENZENE	25	22.9	91.6%	25	25.7	102.8%	11.5%

ANALYSES PERFORMED BY: H. Atkinson / W. Robb

MID-AMERICA ENVIRONMENTAL

QA/QC REPORT - MS/MSD DATA

ANALYSIS DATE : 11/10/02

MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) FOR WATERS

COMPOUND	SPK CONC (ug/L)	MS CONC (ug/L)	%REC MS	MSD CONC (ug/L)	%REC MSD	RPD	ACCEPTABLE RPD	ACCEPTABLE RECOVERY
TPH DIESEL	50	43	85.6%	44	87.6%	2.3%	15%	65% - 125%
TPH OIL	50	41	81.0%	41	81.4%	0.5%	15%	65% - 125%

ANALYSIS DATE : 11/10/02

MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) FOR SOILS

COMPOUND	SPK CONC (mg/kg)	MS CONC (mg/kg)	%REC MS	MSD CONC (mg/kg)	%REC MSD	RPD	ACCEPTABLE RPD	ACCEPTABLE RECOVERY
TPH DIESEL	500	461	92.2%	442	88.4%	4.2%	15%	65% - 125%
TPH OIL	500	428	85.6%	420	84.0%	1.8%	15%	65% - 125%

SPK CONC - CONCENTRATION SPIKED INTO MATRIX
MS CONC - ANALYZED CONCENTRATION OF SPIKED SAMPLE
% REC - PERCENT RECOVERY OF SPIKE FROM MATRIX
RPD - RELATIVE PERCENT DIFFERENCE BETWEEN MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES

ANALYSES PERFORMED BY: Hermon Atkinson

MID-AMERICA ENVIRONMENTAL

QA/QC REPORT - MS/MSD DATA

ANALYSIS DATE : 11/19/02

MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) FOR WATERS

COMPOUND	SPK CONC (ug/L)	MS CONC (ug/L)	%REC MS	MSD CONC (ug/L)	%REC MSD	RPD	ACCEPTABLE RPD	ACCEPTABLE RECOVERY
TPH GASOLINE	4000	3109	77.7%	3470	86.8%	11.0%	15%	65% - 125%
TPH DIESEL	10000	10260	102.6%	11030	110.3%	7.2%	15%	65% - 125%
TPH OIL	10000	6890	68.9%	6760	67.6%	1.9%	15%	65% - 125%
MTBE	50	57	114.8%	58	115.0%	0.2%	15%	65% - 125%
BENZENE	50	49	97.0%	50	100.6%	3.6%	15%	65% - 125%
TOLUENE	50	49	98.4%	51	101.8%	3.4%	15%	65% - 125%
ETHYLBENZENE	50	51	101.2%	53	105.9%	4.5%	15%	65% - 125%
TOTAL XYLENES	150	159	106.1%	163	108.7%	2.4%	15%	65% - 125%

ANALYSIS DATE : 11/18/02

MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) FOR SOILS

COMPOUND	SPK CONC (mg/kg)	MS CONC (mg/kg)	%REC MS	MSD CONC (mg/kg)	%REC MSD	RPD	ACCEPTABLE RPD	ACCEPTABLE RECOVERY
TPH GASOLINE	200	208	104.0%	224	112.0%	7.4%	15%	65% - 125%
TPH DIESEL	500	547	109.4%	513	102.6%	6.4%	15%	65% - 125%
TPH OIL	500	526	105.2%	525	105.0%	0.2%	15%	65% - 125%
MTBE	0.250	0.279	111.6%	0.283	113.2%	1.4%	15%	65% - 125%
BENZENE	0.250	0.270	108.0%	0.280	112.0%	3.6%	15%	65% - 125%
TOLUENE	0.250	0.267	106.8%	0.277	110.8%	3.7%	15%	65% - 125%
ETHYLBENZENE	0.250	0.270	108.0%	0.283	113.2%	4.7%	15%	65% - 125%
TOTAL XYLENES	0.750	0.839	111.9%	0.882	117.6%	5.0%	15%	65% - 125%

SPK CONC - CONCENTRATION SPIKED INTO MATRIX
MS CONC - ANALYZED CONCENTRATION OF SPIKED SAMPLE
% REC - PERCENT RECOVERY OF SPIKE FROM MATRIX
RPD - RELATIVE PERCENT DIFFERENCE BETWEEN MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES

ANALYSES PERFORMED BY: Hermon Atkinson

MID-AMERICA ENVIRONMENTAL

QA/QC REPORT - CALIBRATION DATA

Mid-America Environmental Project #021107W1

DATE:		11/7/02		11/8/02		11/11/02		11/12/02		11/13/02		11/14/02	
COMPOUND	STD AMOUNT	STD	%DIFF	STD	%DIFF	STD	%DIFF	STD	%DIFF	STD	%DIFF	STD	%DIFF
TPH GASOLINE	10000	--	--	--	--	--	--	--	--	--	--	--	--
TPH DIESEL FID2	500	485	3.0%	472	5.6%	479	4.2%	460	8.0%	506	1.2%	474	5.2%
TPH OIL FID2	500	502	0.4%	442	11.6%	486	2.8%	502	0.4%	475	5.0%	464	7.2%

% DIFF - DIFFERENCE, IN PERCENT, BETWEEN THE STANDARD AMOUNT AND THE QUANTIFIED CONTINUING CALIBRATION STANDARD
ACCEPTABLE LIMIT IS 15% OR LOWER

ANALYSES PERFORMED BY: H. Atkinson

MID-AMERICA ENVIRONMENTAL

QA/QC REPORT - CALIBRATION DATA

Mid-America Environmental Project #021107W1

DATE:		11/15/02		11/18/02		11/19/02		11/21/02			
COMPOUND	STD AMOUNT	STD	%DIFF	STD	%DIFF	STD	%DIFF	STD	%DIFF		
TPH GASOLINE	10000	9300	7.0%	8544	14.6%	9155	8.5%	8756	12.4%		
TPH DIESEL FID2	500	555	11.0%	565	13.0%	566	13.2%	547	9.4%		
TPH OIL FID2	500	547	9.4%	497	0.6%	514	2.8%	513	2.6%		
MTBE	100.00	100.2	0.2%	87.2	12.8%	110.6	10.6%	109.9	9.9%		
BENZENE	100.00	100.1	0.1%	85.8	14.3%	96.5	3.5%	98.5	1.5%		
TOLUENE	100.00	100.1	0.1%	101.1	1.1%	100.0	0.0%	104.6	4.6%		
ETHYLBENZENE	100.00	99.8	0.2%	99.9	0.1%	100.1	0.1%	104.4	4.4%		
m&p-XYLENES	200.00	200.2	0.1%	198.4	0.8%	199.1	0.5%	207.8	3.9%		
o-XYLENES	100.00	100.1	0.1%	97.5	2.5%	100.1	0.1%	102.3	2.3%		

% DIFF - DIFFERENCE, IN PERCENT, BETWEEN THE STANDARD AMOUNT AND THE QUANTIFIED CONTINUING CALIBRATION STANDARD
ACCEPTABLE LIMIT IS 15% OR LOWER

ANALYSES PERFORMED BY: H. Atkinson

MID-AMERICA ENVIRONMENTAL

Office: 6 Great Knight Court
Manchester, MO 63011
314.645.8185 or 636.391.8944
Fax 314.645.8304 or 636.391.8695

Warehouse: 3650 Big Bend Industrial Court
St. Louis, MO 63143

CHAIN-OF-CUSTODY RECORD

Client Name: MACTEC
Address: 3199 RIVERPORT TECH CENTER
ST. LOUIS MO 63043
Phone: 314 209 5900 Fax: 314 209-5929

Project Name: BOEING TRACT 1 SOUTH
Site Address:
Project Manager: DENNIS BRINKLOW
Project Number: 510200

Laboratory Notes

Lab Project Number: C2110701
Requested TAT: ON SITE

Sample Receipt

Total # of Containers: 8
Received in Good Condition: YES / NO
Temperature Upon Receipt (if applicable): N/A

Billing:
Address:
Phone: Fax:
Contact:

Sample ID(s):	Date	Time	Matrix	OA1	OA2	418.1	8010	8021					Notes
B48I1-7	11/11/02	0915	SOIL		X			X					
B48I2-6	11/11/02	0950	SOIL		X			X					
B48I1W	11/11/02	1040	WATER		X			X					
B48I2W	11/11/02	1125	WATER		X			X					
B48N1-9	11/11/02	1040	SOIL		X			X					
B2N1-8	11/11/02	1420	SOIL					X					
B48N1W	11/11/02	1505	WATER		X			X					
B2N1W	11/11/02	1615	WATER	JET	X			X					

Relinquished By: [signature] Date/Time 11/11/02
Relinquished By: Date/Time
Received By: [signature] Date/Time 11/11/02
Received By: Date/Time

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Est. 1970

REPORT OF ANALYSIS

December 19, 2002

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

ESC Sample # : L98577-01

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : TRIP BLANK

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/17/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/17/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/17/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/17/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/17/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/17/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/17/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/17/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/17/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/17/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/17/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/17/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-01

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : TRIP BLANK

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/17/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/17/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/17/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/17/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/17/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/17/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/17/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/17/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/17/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/17/02	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/17/02	1
Dibromofluoromethane	100		% Rec.	8260B	12/17/02	1
4-Bromofluorobenzene	96.		% Rec.	8260B	12/17/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
The reported analytical results relate only to the sample submitted.
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Fax (615) 758-5859

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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-02

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : B48N1

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/14/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/14/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/14/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/14/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/14/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/14/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/14/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
cis-1,2-Dichloroethene	0.014	0.0010	mg/l	8260B	12/14/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/14/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-02

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : B48N1

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/14/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/14/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/14/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/14/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/14/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/14/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Tetrachloroethene	0.0034	0.0010	mg/l	8260B	12/14/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/14/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/14/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/14/02	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/14/02	1
Dibromofluoromethane	100		% Rec.	8260B	12/14/02	1
4-Bromofluorobenzene	93.		% Rec.	8260B	12/14/02	1
TPH (GC/FID) High Fraction	0.11	0.10	mg/l	3510/DRO	12/17/02	1
Surrogate Recovery (50-150)						
o-Terphenyl	66.		% Rec.	3510/DRO	12/17/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-03

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW-9S

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	4.3	1.0	ppm	8015M	12/16/02	1
Chloride	380	1.0	mg/l	9056	12/13/02	1
Nitrate	BDL	0.10	mg/l	9056	12/13/02	1
Nitrite	BDL	0.10	mg/l	9056	12/13/02	1
Sulfate	BDL	5.0	mg/l	9056	12/13/02	1
Free Carbon Dioxide	170	0.0	mg/l	406B	12/12/02	5
Ethane	BDL	10.	ppm	8015M	12/16/02	1
Ethene	BDL	10.	ppm	8015M	12/16/02	1
DOC	17.	1.0	mg/l	5310	12/18/02	1
Sulfide	BDL	0.020	mg/l	9030B	12/13/02	1
TOC (Total Organic Carbon)	17.	1.0	mg/l	9060	12/14/02	1
Iron	14.	0.020	mg/l	6010B	12/16/02	1
Iron,Dissolved	14.	0.020	mg/l	6010B	12/19/02	1
Manganese,Dissolved	0.78	0.010	mg/l	6010B	12/19/02	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/14/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/14/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/14/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
sec-Butylbenzene	0.0014	0.0010	mg/l	8260B	12/14/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/14/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/14/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-03

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW-9S

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloroform	BDL	0.0050	mg/l	8260B	12/14/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/14/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/14/02	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/14/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/14/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/14/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/14/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/14/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/14/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/14/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

December 19, 2002

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

ESC Sample # : L98577-03

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW-9S

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,4-Trimethylbenzene	0.0018	0.0010	mg/l	8260B	12/14/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/14/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/14/02	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/14/02	1
Dibromofluoromethane	110		% Rec.	8260B	12/14/02	1
4-Bromofluorobenzene	97.		% Rec.	8260B	12/14/02	1
TPH (GC/FID) High Fraction	3.5	0.10	mg/l	3510/DRO	12/17/02	1
Surrogate Recovery (50-150)						
o-Terphenyl	58.		% Rec.	3510/DRO	12/17/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-04

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW9DW

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/14/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/14/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/14/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/14/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/14/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/14/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/14/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/14/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/14/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/14/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-04

Site ID : BOEING GW MONITORING

Project # : 517042

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW9DW

Collected By : Jack E. Friesner
Collection Date : 12/11/02 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/14/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/14/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/14/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/14/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/14/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/14/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/14/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/14/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/14/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/14/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/14/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/14/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/14/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/14/02	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/14/02	1
Dibromofluoromethane	110		% Rec.	8260B	12/14/02	1
4-Bromofluorobenzene	92.		% Rec.	8260B	12/14/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW9DW DUP

Collected By : Jack E. Friesner
Collection Date : 12/11/02 11:30

ESC Sample # : L98577-05

Site ID : BOEING GW MONITORING

Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/15/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/15/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/15/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/15/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/15/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/15/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW9DW DUP

Collected By : Jack E. Friesner
Collection Date : 12/11/02 11:30

ESC Sample # : L98577-05

Site ID : BOEING GW MONITORING

Project # : 517042

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/15/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/15/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/15/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/15/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/15/02	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/15/02	1
Dibromofluoromethane	100		% Rec.	8260B	12/15/02	1
4-Bromofluorobenzene	92.		% Rec.	8260B	12/15/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

December 19, 2002

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

ESC Sample # : L98577-06

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW7W

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/15/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/15/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/15/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
sec-Butylbenzene	0.0014	0.0010	mg/l	8260B	12/15/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/15/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/15/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/15/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-06

Site ID : BOEING GW MONITORING

Project # : 517042

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW7W

Collected By : Jack E. Friesner
Collection Date : 12/11/02 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/15/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/15/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/15/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/15/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/15/02	1
Surrogate Recovery						
Toluene-d8	98.		% Rec.	8260B	12/15/02	1
Dibromofluoromethane	110		% Rec.	8260B	12/15/02	1
4-Bromofluorobenzene	97.		% Rec.	8260B	12/15/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-07

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW7W DUP

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/15/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/15/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/15/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
sec-Butylbenzene	0.0014	0.0010	mg/l	8260B	12/15/02	1
tert-Butylbenzene	0.0015	0.0010	mg/l	8260B	12/15/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/15/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/15/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/15/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-07

Site ID : BOEING GW MONITORING

Project # : 517042

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW7W DUP

Collected By : Jack E. Friesner
Collection Date : 12/11/02 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/15/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/15/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/15/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/15/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/15/02	1
Surrogate Recovery						
Toluene-d8	97.		% Rec.	8260B	12/15/02	1
Dibromofluoromethane	110		% Rec.	8260B	12/15/02	1
4-Bromofluorobenzene	90.		% Rec.	8260B	12/15/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-08

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : TRIP BLANK

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/17/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/17/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/17/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/17/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/17/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/17/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/17/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/17/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/17/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/17/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/17/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/17/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/17/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-08

Site ID : BOEING GW MONITORING

Project # : 517042

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : TRIP BLANK

Collected By : Jack E. Friesner
Collection Date : 12/11/02 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/17/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/17/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/17/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/17/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/17/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/17/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/17/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/17/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/17/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/17/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/17/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/17/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/17/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/17/02	1
Surrogate Recovery						
Toluene-d8	100		% Rec.	8260B	12/17/02	1
Dibromofluoromethane	100		% Rec.	8260B	12/17/02	1
4-Bromofluorobenzene	96.		% Rec.	8260B	12/17/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-09

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW5DSW DUP

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/15/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/15/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/15/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/15/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/15/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/15/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-09

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW5DSW DUP

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/15/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/15/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/15/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/15/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/15/02	1
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/15/02	1
Dibromofluoromethane	110		% Rec.	8260B	12/15/02	1
4-Bromofluorobenzene	92.		% Rec.	8260B	12/15/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-10

Site ID : BOEING GW MONITORING

Project # : 517042

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW5DSW

Collected By : Jack E. Friesner
Collection Date : 12/11/02 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	12/15/02	1
Mercury,Dissolved	BDL	0.00020	mg/l	7470A	12/15/02	1
Arsenic	BDL	0.010	mg/l	6010B	12/16/02	1
Arsenic,Dissolved	BDL	0.010	mg/l	6010B	12/16/02	1
Barium	0.54	0.0050	mg/l	6010B	12/16/02	1
Barium,Dissolved	BDL	0.0050	mg/l	6010B	12/16/02	1
Cadmium	BDL	0.0050	mg/l	6010B	12/16/02	1
Cadmium,Dissolved	BDL	0.0050	mg/l	6010B	12/16/02	1
Chromium	0.011	0.010	mg/l	6010B	12/16/02	1
Chromium,Dissolved	BDL	0.010	mg/l	6010B	12/16/02	1
Lead	0.019	0.0050	mg/l	6010B	12/16/02	1
Lead,Dissolved	BDL	0.0050	mg/l	6010B	12/16/02	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	12/15/02	1
Acrolein	BDL	0.050	mg/l	8260B	12/15/02	1
Acrylonitrile	BDL	0.050	mg/l	8260B	12/15/02	1
Benzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromoform	BDL	0.0010	mg/l	8260B	12/15/02	1
Bromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Chloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	12/15/02	1
Chloroform	BDL	0.0050	mg/l	8260B	12/15/02	1
Chloromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dibromo-3-Chloropropane	BDL	0.0020	mg/l	8260B	12/15/02	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Dibromomethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-10

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Site ID : BOEING GW MONITORING

Sample ID : MW5DSW

Project # : 517042

Collected By : Jack E. Friesner
Collection Date : 12/11/02 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	12/15/02	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	12/15/02	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	12/15/02	1
2-Butanone (MEK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	12/15/02	1
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/l	8260B	12/15/02	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	12/15/02	1
Naphthalene	BDL	0.0050	mg/l	8260B	12/15/02	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Styrene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Toluene	BDL	0.0050	mg/l	8260B	12/15/02	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichloroethene	BDL	0.0010	mg/l	8260B	12/15/02	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	12/15/02	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	12/15/02	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	12/15/02	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	12/15/02	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
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REPORT OF ANALYSIS

Mr. Dennis Brinkley
Harding ESE - St. Louis, MO
3199 Riverport Tech Center Drive
St. Louis, MO 63043

December 19, 2002

ESC Sample # : L98577-10

Site ID : BOEING GW MONITORING

Project # : 517042

Date Received : December 12, 2002
Description : Boeing-SWMU 17

Sample ID : MW5DSW

Collected By : Jack E. Friesner
Collection Date : 12/11/02 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Surrogate Recovery						
Toluene-d8	99.		% Rec.	8260B	12/15/02	1
Dibromofluoromethane	110		% Rec.	8260B	12/15/02	1
4-Bromofluorobenzene	89.		% Rec.	8260B	12/15/02	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3510/DRO	12/17/02	1
Surrogate Recovery (50-150)						
o-Terphenyl	65.		% Rec.	3510/DRO	12/17/02	1

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)

Laboratory Certification Numbers:
A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L98577-02	Acrolein	J4J6
	sec-Butylbenzene	J3
	Carbon tetrachloride	J3J4J5
	Chloroethane	J3
	2-Chloroethyl vinyl ether	J4J6
	Chloromethane	J3
	4-Chlorotoluene	J3
	Dichlorodifluoromethane	J3
	1,1-Dichloroethene	J3
	1,1-Dichloropropene	J3J4
	Ethylbenzene	J3
	Isopropylbenzene	J3
	n-Propylbenzene	J3
	Tetrachloroethene	J3
	Trichloroethene	J3
	Trichlorofluoromethane	J3
	1,3,5-Trimethylbenzene	J3
	Vinyl chloride	J3
	Xylenes, Total	J3
L98577-03	Ethene	J3J4
	Iron	B
	Nitrate	T8
	Nitrite	T8, O
	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4
L98577-04	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4
L98577-05	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4
L98577-06	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4
L98577-07	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4
L98577-09	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4
L98577-10	Acrolein	J4
	Carbon tetrachloride	J4
	2-Chloroethyl vinyl ether	J3J4
	1,1-Dichloropropene	J4

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is unacceptably low
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	72-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	79-120
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	66-131

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Harding ESE - St. Louis, MO

3199 Riverport Tech Center Drive
St. Louis,MO 63043

Alternate billing information:

Chain of Custody
Page ___ of ___

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (800) 767-5859
FAX (615) 758-5859

Report to: Mr. Dennis Brinkley
Email: dlbrinkley@mactec.com
Project Description: Boeing-SWMU 17
City/State Collected: ST LOUIS MO
Phone: (314) 209-5900
FAX: (314) 209-5929
Client Project #: 517042
Lab Project #: HARDMO-517042
Collected by (print): JACK E FLIGNER
Site/Facility ID#: BOEING GW MONITOR
P.O.#:
Collected by (signature):
Packed on Ice: N ___ Y X
Rush? (Lab MUST Be Notified)
___Same Day 200%
___ Next Day 100%
___ Two Day 50%
Date Results Needed: STANDARD
Email? ___No X Yes
FAX? No Yes

CoCode: HARDMO (lab use only)
Template/Prelogin: T10775/ P62345
Cooler #:
Shipped Via: FedEX Ground

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Anions, DOC 500mlHDPE-NoPres	CO2 250mlHDPE-NoPres	DRO 1L-Amb-Add HCl	Metals 250mlHDPE-HNO3	Meth,Ethane,Ethene 40mlAmb-NoPres	TOC 125mlAmb-HCl	V8260 40mlAmb-HCl	Remarks/Contaminant	Sample # (lab only)
~~MW-8S~~		~~GW~~				~~9~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		L98577-01
MW-8S DUP		~~GW~~				~~3~~			~~X~~				~~X~~		
~~MW-8I~~		~~GW~~				~~3~~			~~X~~				~~X~~		
~~TB-1~~		~~GW~~				~~3~~			~~X~~				~~X~~		
~~MW-7S~~		~~GW~~				~~9~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
~~MW-5I~~		~~GW~~				~~9~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
~~MW-6S~~ TRIP BLANK		~~GW~~		12/11/02		~~3~~			~~X~~				~~X~~ X		
~~TB-2~~ B48N1		GW		12/11/02	1300	3			X				X		-01
MW-9S		GW		12/11/02	1330	9	X	X	X	X	X	X	X		-02 -03

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	12/11/02	1730	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)
			Brian Brooks

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ____
Temp: 3.7 Bottles Received: 29
Date: 12/12 Time: 9:45

Condition: (lab use only) ok
pH Checked: <2
NCF:

Harding ESE - St. Louis, MO

3199 Riverport Tech Center Drive
St. Louis,MO 63043

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (800) 767-5859
FAX (615) 758-5859

Report to: Mr. Dennis Brinkley
Email: dlbrinkley@mactec.com
Project Description: Boeing / GKN
City/State Collected: ST LOUIS MO
Phone: (314) 209-5900
FAX: (314) 209-5929
Client Project #: 510098
Lab Project #: HARDMO-510098
Collected by (print): JACK E FRIESNER
Site/Facility ID#:
P.O.#:
Collected by (signature):
Packed on Ice N ___ Y X
Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day.....100%
___ Two Day 50%
Date Results Needed: STANDARD
Email? ___No X Yes
FAX? X No ___Yes

CoCode: HARDMO (lab use only)
Template/Prelogin: T10770/ P70736
Cooler #:
Shipped Via: FedEX 2nd Day

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Anions, DOC 500mlHDPE-NoPres	CO2,Diss.Metals 250mlHDPE-NoPres	CO2,DissMetals 250mlHDPE-NoPres	~~CR6 250mlHDPE-NoPres~~ 40mLHDPE HCl V8260	DRO 1L-Amb-Add HCl	Diss. Metals 500mlHDPE-NoPres	Metals 250mlHDPE-HNO3	Meth,Ethane,Ethene 40mlAmb-NoPres	Remarks/Contaminant	Sample # (lab only)
~~MW8~~ MW9DW		~~GW~~		12/11/02	1130	2				X						L9857704
~~MW8AS~~ MW9DW DUP		GW		12/11/02	1130	2				X						-05
~~MW5AD~~ MW7W		GW		12/11/02	1545	2				X						-06
~~MW3A~~ MW7W DUP		GW		12/11/02	1545	~~29~~	~~X~~	~~X~~		X			~~X~~	~~X~~		-07
~~MW3B~~ TRIP BLANK		~~GW~~		12/11/02		~~19~~	~~X~~	~~X~~		X			~~X~~	~~X~~		-08
~~B28MW2~~ MW5DSW DUP		GW		12/11/02	0910	2				X						-09
~~B25MW4~~		~~GW~~				~~5~~				~~X~~	~~X~~	~~X~~	~~X~~			
~~MW5BS~~		~~GW~~				~~5~~				~~X~~	~~X~~	~~X~~	~~X~~			
MW5DSW		GW		12/11/02	~~0~~0910	5				X	X	X	X			-10

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Flow _____ Other _____

Remarks:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___	Condition: (lab use only)
	12-11-02	1730			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.7	Bottles Received: 29
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Brian Brooks	Date: 12/12	Time: 9:45
				pH Checked: <2	NCF: