



Appendix A

Summaries of Previous
Environmental Investigations

Appendix A – Summaries of Previous Environmental Investigations

PRELIMINARY ASSESSMENT (1989)

A state preliminary assessment was completed in December 1989 and indicated two source areas which included approximately 38 acres (defined using only five sampling locations) of contaminated soil and a cluster of six unlined surface impoundments containing approximately 900,000 cubic feet of material. Constituents such as acetone, benzene, toluene, methyl ethyl ketone (MEK), PCBs, cadmium, cobalt, lead, and mercury were identified in the soil and the surface impoundment contained arsenic, benzene, toluene, MEK, and heavy metals.

BLACK AND VEATCH STUDY CONDUCTED FOR EPA REGION 4 (1992-1993)

In 1992, a site inspection, field investigation, and geophysical survey were conducted to collect information regarding potentially hazardous environmental conditions at the site. The USEPA was concerned about potential releases to groundwater, surface water, soil, and air and the potential threats to human health and ecology. The geophysical survey program was initiated to identify sample locations and evaluate former areas where drums, sludge, boiler ash, and other process wastes were reportedly landfilled, land applied, or buried. Sediment (4), surface water (2), surface soil (5), subsurface soil (2), and groundwater (3) samples were collected from a number of strategic locations selected based on historical information, hydrological data, field observations and geophysical survey results. All samples were analyzed for parameters in the Target Compound List (TCL) and Target Analytical List (TAL) list including organics, pesticides, PCBs, metals, and cyanide. Surface water sample results summarized in the 1993 B&V report indicated that arsenic and sodium concentrations exceed background concentrations. The inorganics barium, copper, iron, magnesium, manganese, nickel, and zinc were detected at concentrations above background or the sample quantitation limit (SQL). No TCL organics were detected in sediment or surface water samples.

Hercules responded to the B&V Report on April 26, 1994. This letter was addressed to the MDEQ. The Hercules response disputes most of the findings in the B&V Report and provides analytical results of split samples collected during the B&V investigation. Many of the split sample analytical results were reported as non-detect as opposed to the B&V sample results (which indicated elevated levels of the constituents listed above).

BATCO STUDY REQUIRED BY MDEQ (1994-1997)

Bonner Analytical Testing Company prepared a report dated December 1, 1998, which presented results of four quarterly groundwater monitoring events conducted between December 1997 and December 1998. Bonner installed six shallow groundwater monitoring wells in December 1987. The wells were completed at depths between 10 and 20 feet below ground surface. The results of the four quarterly sampling events are summarized in the December 1, 1998, report and indicate no significant detections of the eight RCRA metals (low levels of metals were detected above the laboratory method detection limit [MDL] in various wells over the quarterly events, as well as several detections of non-RCRA metals beryllium, nickel, copper, and zinc). Acetone was detected above the MDL two times in two different wells. MEK and isopropyl benzene were each detected once, and an aromatic hydrocarbon compound was tentatively identified in one well. An organophosphate compound was tentatively identified in all four sampling events in MW-4. In

general, MW-4, located near the sludge pits, indicated low levels of metals and the organic compounds discussed above.

PIEZOMETER AND MONITORING WELL INSTALLATION (1999 - 2000)

A site investigation was conducted in accordance with the *Site Investigation Work Plan* (Eco-Systems, 1999) and additional comments from MDEQ in an approval letter dated April 5, 1999. The work described in the work plan centered on efforts to determine whether Dioxathion, the miticide contained in Delnav, was present in site soil and groundwater. The investigation also included an evaluation of the groundwater flow regime and refinement of the site hydrogeologic model.

The scope of the 1999-2000 investigation included the installation of fourteen piezometers, five monitoring wells, and four staff gauges to provide hydrogeologic and groundwater quality information near the former Dioxathion production areas and near the former wastewater sludge pits. Piezometers TP-1 through TP-14 were installed to evaluate groundwater flow conditions in the uppermost saturated interval beneath the site. Monitoring wells MW-7, MW-8, and MW-9 were installed to assess groundwater quality at points near the former Delnav production areas and monitoring wells MW-10 and MW-11 were installed to assess groundwater quality between the sludge disposal pits and Green's Creek. The wells would not be sampled until 2002, following the Dioxathion Standard Study as discussed in the following sections. A summary of the investigation activities is provided in the *Site Investigation Report* (ESI, 2003).

DIOXATHION STANDARD STUDY REQUIRED BY MDEQ (2000-2002)

Prior to the sampling of the new and existing monitoring wells, questions arose regarding the analytical method for Dioxathion and the quality of Dioxathion for use as a laboratory standard. As a result, Hercules in conjunction with MDEQ's consultant Mississippi State University (MSU) developed analytical protocols for soil and groundwater. These protocols were documented in the *Sampling and Analysis Protocol for Determination of Dioxathion in Water* (Hercules, 2002).

Since the quality of available analytical standards was questionable, Hercules contracted with Sigma-Aldrich Chemicals to synthesize Dioxathion standards. In August 2002, Dioxathion of a suitable quality had been manufactured to be used as a laboratory standard and Hercules and the MDEQ had agreed to a laboratory protocol.

In October 2002, groundwater samples were collected from wells MW-1, MW-4, and MW-5, MW-8, MW-9, and MW-11 for analyses of Dioxathion (cis-Dioxathion, trans-Dioxathion, and Dioxenethion) by both BATCO and Mississippi State Chemical Laboratory (MSCL) to test the newly established protocol. Monitoring wells MW-5 and MW-6 were also sampled for analysis of VOCs and SVOCs.

Isomers of Dioxathion were detected in wells MW-4, MW-5, MW-8, MW-9, and MW-11; however, no concentrations were above the target remedial goal (TRG) identified in the MDEQ Brownfields program (MDEQ, 2002) of 54.8 micrograms per liter ($\mu\text{g/L}$). No VOCs or SVOCs were detected above the MDL in samples collected from MW-5 and MW-6. A complete summary of the sampling/analytical methods and results of the October 2002 sampling were provided in the *Site Investigation Report* (ESI, 2003) and excerpted results from the report are provided in ESI Groundwater and Geophysical Studies Required by MDEQ (2001-2002)

In December 2002, groundwater samples were collected for analysis of Dioxathion (MW-1 through MW-11), VOCs (MW-4 and MW-7 through MW-11), and SVOCs (MW-7 through MW-11). Samples were analyzed by BATCO and a split sample for MW-11 was collected by MDEQ. Concentrations of cis-Dioxathion, trans-Dioxathion, Dioxenethion, VOCs, and SVOCs were detected at various locations. Various VOCs were detected at concentrations exceeding the TRGs in wells MW-4, MW-8, MW-9, and MW-11. No other constituents were detected at concentrations above the applicable TRG. Detections of Dioxenethion could not be compared to TRGs because no TRG was available.

ESI INTERIM GROUNDWATER MONITORING REPORT (2003)

The *Interim Groundwater Monitoring Report* (ESI, 2003) was submitted describing the results of this sampling and recommending confirmation sampling prior to completing the remaining activities outlined in the 1999 Work Plan. In response, the MDEQ issued a letter dated February 3, 2003 approving the proposed confirmation sampling and requesting completion of the work plan tasks. In addition, MDEQ requested submittal of a supplemental work plan for groundwater delineation and a geophysical survey. A summary of the December 2002 sampling was provided in the *Site Investigation Report* (ESI, 2003).

ESI GROUNDWATER RE-SAMPLING AND SURFACE WATER AND SEDIMENT SAMPLING IN GREENS CREEK (2003)

On February 11, 2003, groundwater, surface water, and stream sediment samples were collected in accordance with the February 3, 2003 MDEQ request. Wells MW-4, MW-8, MW-9, and MW-11 were sampled for confirmation of the 2002 VOC results. In addition, surface water and sediment samples were collected from five locations (CM-1 through CM-5) in Green's Creek for analysis of Dioxathion and VOCs. Total organic carbon (TOC) and grain size analyses were also performed on sediment samples. Duplicate samples of surface water and sediment were collected by MDEQ at location CM-3.

VOCs were detected in groundwater at concentrations exceeding the TRGs in wells MW-4, MW-8, MW-9, and MW-11. The sample collected from MW-8 (located in the former dioxathion production area) showed the highest concentrations of VOCs.

Various VOCs were detected in each of the samples collected from surface water locations CM-1 (upgradient) through CM-5. The greatest numbers of VOCs were detected in the surface water sample collected from CM-1 (the westernmost location), possibly indicating an upstream source for VOCs. Cis-Dioxathion was detected in surface water at CM-2 and Dioxenethion was detected in surface water at CM-3, CM-4 and CM-5.

Various VOCs were detected in each of the samples collected from stream sediment locations CM-1 through CM-5. Similar to results for the surface water samples, the greatest numbers of VOCs were detected in the sediment sample collected from CM-1 (upgradient). Trans-Dioxathion was detected in sediment at CM-1, CM-3, and CM-5. TOC was reported in sediment samples at concentrations ranging between 2 and 7 parts per million (ppm). The sample collected from CM-3 showed primarily silt and clay and the samples collected from CM-4 and CM-5 showed primarily sand and gravel.

A summary of the sampling/analytical methods and results of the February 2003 sampling were provided in the *Site Investigation Report* (ESI, 2003).

ESI SUPPLEMENTAL GROUNDWATER SAMPLING AND GEOPHYSICAL SURVEY REQUIRED BY MDEQ (2003)

A supplemental site investigation was conducted in accordance with the *Work Plan for Supplemental Site Investigation* (ESI, June 2003) approved by MDEQ in a letter dated July 11, 2003. The supplemental work plan was prepared at the request of MDEQ to complete the following activities:

- Delineate the lateral and vertical extent of constituents of concern (COCs) in groundwater;
- Collect hydrogeologic information;
- Conduct a geophysical investigation to delineate the lateral boundaries of the waste in the former landfill and locate accumulations of buried metal in the landfill and in a potential burial area identified in the western portion of the site;
- Conduct single-well response tests to provide hydraulic conductivity estimates; and
- Collect surface water and stream sediment from Green's Creek to evaluate locations upstream from previous sampling locations.

The scope of the supplemental investigation included:

- Advancement of eighteen Geoprobe® borings (GP-1 through GP-18) to define the lateral and vertical extent of VOCs in groundwater and to investigate groundwater quality in the vicinity of select piezometers;
- Groundwater sample collection from permanent monitoring wells MW-1, MW-4, MW-10, and MW-11 for analysis of VOCs and Dioxathion;
- Geophysical investigation using ground conductivity and magnetic intensity methods at two areas of the site (former landfill area and small grid area located west of the main plant); and
- Collection of surface water from two locations (upstream location CM-0 and previous location CM-1) and collection of stream sediment from one location (upstream location CM-0)

SURFACE WATER AND SEDIMENT SAMPLING CONDUCTED BY MDEQ (2004)

As part of a response to requests by the public, in April 2004, MDEQ conducted a sampling event in the drainage pathways discharging from the Hercules facility. Four sediment samples (two from Green's Creek and two from the former Hercules Ditch) and three surface water samples (two from Green's Creek and one from the former Hercules Ditch) were collected and analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and Dioxathion. Samples collected from locations S-1 and S-2 were collected from Green's Creek across Highway 42 from the facility. Samples collected from locations S-3 and S-4 were collected downgradient of an on-site process water storage tank (Tank ET-10, referred to in the memo as the "NPDES tank"). No surface water was collected from location S-3 because it was dry.

Concentrations of toluene below the MDEQ TRGs were detected in soil collected at locations S-3 and S-4. No other constituents were detected in soil and no constituents were detected in surface water. While some trace concentrations of target analytes were detected, the report concluded that "the results of these samples did not detect any compounds above MDEQ's target remediation goal levels."

ESI REMEDIAL ACTION EVALUATION (RAE), CORRECTIVE ACTION PLAN (CAP), AND MDEQ SURFACE WATER/SEDIMENT SAMPLING REQUIRED BY MDEQ (2004-2005)

A Remedial Action Evaluation (RAE) was prepared to evaluate and recommend remedial alternatives for the following areas: Sludge Pits, Landfill, Green's Creek, and Groundwater. Each of the remedial alternatives were evaluated with respect to the protection of human health and the environment (HH&E) and based on the following criteria: long-term effectiveness; potential to reduce mobility, toxicity or volume; short term effectiveness; implementability; and cost efficiency.

The following conclusions were presented for each evaluated area:

- Sludge Pits: sludge does not pose a significant risk to HH&E; potential direct exposure risk for site workers and wildlife; potential indirect exposure risk resulting from leaching and natural weather events overflowing the pit berms;
- Landfill: no current risk to HH&E; future land use changes could expose landfill materials and/or mobilize constituents from the landfill into the groundwater or nearby surface water;
- Groundwater: VOCs present in onsite groundwater at concentrations above TRGs; no VOCs above TRGs in offsite groundwater; and
- Green's Creek: surface water and sediment containing VOCs and dioxathion do not pose a significant risk to HH&E; the results from samples collected upstream of Hercules property may indicate an offsite source

In the final revised CAP (GES, 2005), the primary components of the proposed remedial alternatives consisted of groundwater and surface monitoring networks, deed restrictions, and fencing as summarized below for each evaluated area:

- Sludge Pits: MNA combined with institutional controls/deed restrictions to restrict current/future land use and ensure that contaminated groundwater does not migrate from the sludge pits at unacceptable levels.
- Landfill: MNA combined with deed restrictions to restrict future land use and ensure that contaminated groundwater does not migrate from the landfill at unacceptable levels.
- Groundwater: MNA combined with deed restrictions to restrict future land use in the area of groundwater containing VOCs in excess of TRGs and to ensure that contaminated groundwater does not migrate from the site at unacceptable levels.

- Green's Creek: MNA combined with institutional controls/deed restrictions to restrict current/future land use of Green's Creek to ensure that contaminated water does not migrate at unacceptable levels from Green's Creek.

USEPA SLUDGE PIT SAMPLING (2010)

In September 2010, at the request of MDEQ, representatives of the Science and Ecosystem Support Division (SESD) conducted a sampling investigation at the on-site sludge disposal area. Between September 28-29, 2010, SESD representatives collected 13 subsurface waste samples (HERC01 through HERC13) ranging from depths between 0 and 7 feet below land surface. Twelve of the locations were collected from the Sludge Pit area (referred to in the SESD report as the "back forty" area). One sample (HERC08) was collected from a lined pond referred to in the SESD report as the "wetlands" area. Samples were collected based on visual observations and results from field screening conducted with a Thermo Toxic Vapor Analyzer (TVA) 1000B. Samples were analyzed by the SESD laboratory for VOCs, SVOCs, metals, and TCLP.

Various VOCs, SVOCs, and metals were detected in the sludge samples. USEPA compared the analytical data to the MDEQ Tier 1 TRGs for unrestricted soil use and the USEPA Regional Screening Levels (RSLs). Benzene (10 samples), ethyl benzene (1 sample), isopropylbenzene (1 sample), toluene (11 samples), 1,1-biphenyl (1 samples), naphthalene (7 samples), arsenic (4 samples), Chromium VI (13 samples), and vanadium (9 samples) exceeded the MDEQ TRGs and/or residential USEPA RSLs. No other VOCs, SVOCs, or metals failed the TCLP limits or exceeded USEPA or MDEQ regulatory levels.

USEPA analyzed samples with detected total analyte concentrations by the TCLP method. Benzene failed the TCLP regulatory limit of 0.5 mg/L in six of the samples. A summary of the investigation activities and analytical results was provided in the *Field Investigation Report* (SESD, 2011).



EDR Database Findings

Regulatory agency database information was obtained from the EDR Radius Map Report, which maps and lists properties in U.S. government and Mississippi state environmental databases with existing conditions or status that may have the potential to impact the site. A description of the databases searched and the information obtained is summarized below.

Type of Database	Description of Database/Effective Date	Radius Searched	Number of Sites Identified in 0.5-Mile Radius	Number of Sites Identified in 4-Mile Radius
NPL	The National Priorities List identifies uncontrolled or abandoned hazardous waste sites. To appear on the NPL, sites must have met or surpassed a predetermined hazard ranking system score, been chosen as a state's top priority site, pose a significant health or environmental threat, or be a site where the EPA has determined that remedial action is more cost-effective than removal action.	4 miles	0	0
CORRACTS	Listing of RCRA facilities that are undergoing corrective action. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.	4 miles	0	0
CERCLIS	The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database identifies hazardous waste sites that require investigation and possible remedial action to mitigate potential negative impacts on human health or the environment.	4 miles	1 (including Hercules)	3 (including Hercules)

Type of Database	Description of Database/Effective Date	Radius Searched	Number of Sites Identified in 0.5-Mile Radius	Number of Sites Identified in 4-Mile Radius
CERC-NFRAP	CERCLIS-No Further Remedial Action Planned (CERCLIS-NFRAP) contains data on sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. Source: USEPA/National Technical Information Service (NTIS).	4 miles	0	2
RCRA-NonGen	RCRAInfo database of sites that do not presently generate hazardous waste.	4 miles	1	17
RCRA Generators	RCRA-regulated hazardous waste generator notifiers list (includes small quantity, large quantity, and conditionally exempt small quantity generators).	4 miles 4 miles 4 miles	SQG - 2 LQG - 1 (including Hercules) CESQG - 4	SQG - 14 LQG - 1 (including Hercules) CESQG - 44
ERNS and state spills list	EPA's Emergency Response Notification System (ERNS) list contains reported spill records of oil and hazardous substances.	4 mile	2	43
HMIRS	The Hazardous Materials Incident Report System contains hazardous material spill incidents reported to the Department of Transportation.	4 mile	0	83
US CDL	US Department of Justice listing of clandestine drug lab locations.	4 mile	0	2
US Brownfields	The EPA's listing of Brownfields properties addressed by Cooperative Agreement Recipients and Brownfields properties addressed by Targeted Brownfields Assessments	4 mile	3	18

Type of Database	Description of Database/Effective Date	Radius Searched	Number of Sites Identified in 0.5-Mile Radius	Number of Sites Identified in 4-Mile Radius
FUDS	Formerly Used Defense Sites where USACOE will take necessary cleanup actions	4 mile	0	1
MINES	Department of Labor, Mine Safety and Health Administration – mine site index	4 mile	0	2
TRIS	The Toxic Chemical Release Inventory System identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313. The source of this database is the U.S. EPA	4 mile	1 (including Hercules)	6 (including Hercules)
TSCA	The Toxic Substances Control Act identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.	4 mile	1 (including Hercules)	7 (including Hercules)
FTTS	FIFRA/TSCA/EPCRA – tracks administrative cases and pesticide enforcement and compliance activities	4 mile	1 (including Hercules)	13 (including Hercules)
SSTS	Federal Insecticide, Fungicide, and Rodenticide Act – registered pesticide-producing establishment	4 mile	1	3
ICIS	Integrated Compliance Information System – supports the information needs of the national enforcement compliance program as well as the NPDES program	4 mile	2 (including Hercules)	5 (including Hercules)
PADS	PCB Activity Database – identified generators, transporters, commercial storers and/or brokers and disposers of PCBs	4 mile	1 (including Hercules)	2 (including Hercules)
FINDS	Facility Index System – US EPA/NTIS database that contains both facility information and “pointers” to other sources of information including RCRIS, PCS, AIRS, FATES, FTTS, CERCLIS, DOCKET, FURS, FRDS, SIA, TSCA, CICS, PADS, RCRA-J, TRIS, TSCA	4 mile	17 (including Hercules)	190 (including Hercules)

Type of Database	Description of Database/Effective Date	Radius Searched	Number of Sites Identified in 0.5-Mile Radius	Number of Sites Identified in 4-Mile Radius
SHWS	The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Quality's Uncontrolled Site Project Tracking System.	4 mile	5 (including Hercules)	28 (including Hercules)
SWF/LF	State inventory of solid waste disposal and landfill sites.	4 miles	0	2
LUST	List of information pertaining to all reported leaking underground storage tanks.	4 miles	3	46
UST/AST	State registered underground and above-ground storage tank sites listing.	4 miles	UST – 17 AST – 0	UST – 203 AST – 2
PERMITS	Environmental Site Information System Listing – NPDES Program, Air Title V, Construction & Operating Programs, Solid/Hazardous Waste Programs	4 miles	2 (including Hercules)	14 (including Hercules)
INST CONTROLS	Sites included on the CERCLA/Uncontrolled Sites File List that have institutional and/or engineering controls	4 miles	2	4
MS NPDES	Mississippi Industrial and Municipal NPDES facilities.	4 mile	1 (including Hercules)	14 (including Hercules)
VCP	Voluntary Evaluation Program Sites	4 mile	1	5
DRYCLEANERS	Listing of drycleaner facilities	4 mile	0	1

Type of Database	Description of Database/Effective Date	Radius Searched	Number of Sites Identified in 0.5-Mile Radius	Number of Sites Identified in 4-Mile Radius
ASBESTOS	Listing of Air Division Asbestos Branch Projects	4 mile	0	4
MGP	Manufactured Gas Plants – records of coal gas plants.	4 mile	0	1





Appendix B

Supplemental Site Information



Appendix B-1

Site Investigation Report (April 2003)



TABLE 2 SUMMARY OF PROTOCOL SAMPLING ANALYTICAL RESULTS - OCTOBER 14, 2002 HERCULES, INC. HATTIESBURG, MISSISSIPPI				
Well	Isomer	Concentrations in parts per billion (ppb)		
		MSCL ¹		BATCO ²
		HPLC/MS	HPLC/UV	GC/MS
MW-1	Dioxenethion	nd ³	nd	nd
	cis-Dioxathion	nd	nd	nd
	trans-Dioxathion	nd	1.5	nd
MW-4	Dioxenethion	32	25	19.22
	cis-Dioxathion	nd	nd	4.80
	trans-Dioxathion	nd	nd	1.61
MW-5	Dioxenethion	nd	nd	5.09
	cis-Dioxathion	nd	nd	1.70
	trans-Dioxathion	0.92	10	1.44
Rinsate	Dioxenethion	nd	nd	nd
	cis-Dioxathion	nd	nd	nd
	trans-Dioxathion	nd	nd	nd
MW-4 Dup	Dioxenethion	na ⁴	na	20.7
	cis-Dioxathion	na	na	4.71
	trans-Dioxathion	na	na	1.75

Notes:

¹ MSCL = Mississippi State Chemical Laboratory

² BATCO = Bonner Analytical & Testing Company

³ nd = Analyte not detected at or above the method detection limit.

⁴ na = not analyzed

TABLE 3 SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS - DECEMBER 4 AND 5, 2002 HERCULES INC. HATTIESBURG, MISSISSIPPI												
Analytes	Concentrations in parts per billion (ppb)											
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	TRG ¹
<i>Dioxathion</i>												
cis-Dioxathion	nd	nd	nd	3.34	nd	nd	nd	nd	12.8	nd	5	
trans-Dioxathion	nd	nd	nd	nd	nd	nd	nd	53.9	nd	nd	nd	
<i>total</i>	nd	nd	nd	3.34	nd	nd	nd	53.9	12.8	nd	5	54.8
Dioxmethion	nd ²	nd	nd	12.9	nd	1.12	9.57	94.3	5.9	nd	50.3	na
<i>Volatiles</i>												
1,1-Dichloroethene	na ³	na	na	nd	na	na	nd	17	5.92	nd	nd	7
Benzene	na	na	na	14	na	na	nd	6900	9.15	nd	114	5
Trichloroethene	na	na	na	nd	na	na	nd	5.8	nd	nd	nd	5
Toluene	na	na	na	nd	na	na	nd	28	nd	nd	nd	1000
Chlorobenzene	na	na	na	1.81	na	na	nd	290	nd	nd	nd	100
Bromodichloromethane	na	na	na	nd	na	na	nd	6.84	nd	nd	nd	0.168
Bromomethane	na	na	na	nd	na	na	nd	4.07	nd	nd	nd	8.52
Carbon Tetrachloride	na	na	na	10	na	na	nd	16000	nd	nd	nd	5
Chloroethane	na	na	na	63	na	na	nd	66	nd	nd	nd	3.64
Chloroform	na	na	na	nd	na	na	nd	1800	nd	nd	nd	0.155
Chloromethane	na	na	na	1.72	na	na	nd	39.2	nd	nd	nd	1.43
Dibromochloromethane	na	na	na	nd	na	na	nd	4.45	nd	nd	nd	0.126
1,2-Dichlorobenzene	na	na	na	nd	na	na	nd	2.71	nd	nd	nd	600
1,3-Dichlorobenzene	na	na	na	nd	na	na	nd	3.75	nd	nd	nd	5.48
1,4-Dichlorobenzene	na	na	na	nd	na	na	nd	3.8	nd	nd	nd	75
1,2-Dichloroethane	na	na	na	nd	na	na	nd	20	nd	nd	3.11	5
cis-1,2-Dichloroethene	na	na	na	nd	na	na	nd	19	nd	nd	nd	70
Ethyl Benzene	na	na	na	nd	na	na	nd	55.6	nd	nd	nd	700
Isopropylbenzene	na	na	na	1.26	na	na	nd	4.6	2.48	nd	nd	679
p-Isopropyltoluene	na	na	na	nd	na	na	nd	23.9	nd	nd	nd	na
Methylene Chloride	na	na	na	nd	na	na	nd	26.1	nd	nd	nd	na
Naphthalene	na	na	na	5.38	na	na	nd	9.14	nd	nd	nd	5
Tetrachloroethene	na	na	na	nd	na	na	nd	8.51	nd	nd	nd	6.2
												5

TABLE 3 - CONTINUED SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS - DECEMBER 4 AND 5, 2002 HERCULES INC. HATTIESBURG, MISSISSIPPI												
<i>Volatiles - continued</i>												
1,2,3-Trichlorobenzene	na	na	na	1.81	na	na	na	na	na	2.55	na	na
1,2,4-Trichlorobenzene	na	na	na	nd	na	na	na	na	na	2.86	na	na
1,2,4-Trimethylbenzene	na	na	na	nd	na	na	na	na	na	1.81	na	na
Xylenes (total)	na	na	na	nd	na	na	na	na	na	79	na	na
Vinyl Chloride	na	na	na	nd	na	na	na	na	na	1.62	na	na
<i>Semi-Volatiles</i>												
4-Methylphenol	na	na	na	na	na	na	na	na	na	13.16	na	na
												183

NOTES:

¹ Target Remediation Goals are taken from the Tier 1 Target Remedial Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001. Bold text indicates concentrations above applicable TRGs.

² nd = Analyte not detected at or above the method detection limit

³ na = Not analyzed

TABLE 4
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS - FEBRUARY 11, 2003
HERCULES, INC.
HATTIESBURG, MISSISSIPPI

Analytes	PQL ¹ (ppb)	Concentrations in parts per billion (ppb)											TRG ²											
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11												
1,1-dichloroethene	10.00	na ³	na	na	na ⁴	na	na	na	1.85 J ⁵	nd	na	na	na	na	na	na	na	na	na	na	na	na	7	
benzene	10.00	na	na	na	nd	na	na	na	12000	64.3	na	na	na	na	na	na	na	na	na	na	na	na	na	5
trichloroethene	10.00	na	na	na	nd	na	na	na	3.2 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	5
toluene	10.00	na	na	na	nd	na	na	na	35.4	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	1000
chlorobenzene	10.00	na	na	na	nd	na	na	na	230 J	5.85 J	na	na	na	na	na	na	na	na	na	na	na	na	na	100
bromodichloromethane	10.00	na	na	na	nd	na	na	na	4.72 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	0.168
carbon tetrachloride	10.00	na	na	na	nd	na	na	na	12000	20.7	na	na	na	na	na	na	na	na	na	na	na	na	na	5
chloroethane	12.00	na	na	na	nd	na	na	na	85.5	19.7	na	na	na	na	na	na	na	na	na	na	na	na	na	3.64
chloroform	10.00	na	na	na	nd	na	na	na	1300	9.83 J	na	na	na	na	na	na	na	na	na	na	na	na	na	0.155
chloromethane	10.00	na	na	na	nd	na	na	na	3.34 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	1.43
1,2-dichlorobenzene	10.00	na	na	na	nd	na	na	na	2.22 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	600
1,4-dichlorobenzene	10.00	na	na	na	nd	na	na	na	3.14 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	75
1,1-dichloroethane	10.00	na	na	na	nd	na	na	na	nd	2.23 J	na	na	na	na	na	na	na	na	na	na	na	na	na	798
1,2-dichloroethane	10.00	na	na	na	nd	na	na	na	79.8	1.43 J	na	na	na	na	na	na	na	na	na	na	na	na	na	5
cis-1,2-dichloroethene	10.00	na	na	na	nd	na	na	na	17.5	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	70
ethyl benzene	10.00	na	na	na	nd	na	na	na	67.5	1.53 J	na	na	na	na	na	na	na	na	na	na	na	na	na	700
isopropylbenzene	10.00	na	na	na	nd	na	na	na	4.35 J	1.92 J	na	na	na	na	na	na	na	na	na	na	na	na	na	679
p-isopropyltoluene	10.00	na	na	na	nd	na	na	na	23.8	1.8 J	na	na	na	na	na	na	na	na	na	na	na	na	na	na ⁵
napthalene	11.00	na	na	na	nd	na	na	na	25.0 B	31.7 B	na	na	na	na	na	na	na	na	na	na	na	na	na	6.2
styrene	10.00	na	na	na	nd	na	na	na	1.25 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	100
tetrachloroethene	10.00	na	na	na	nd	na	na	na	48.9	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	5
1,2,3-trichlorobenzene	10.00	na	na	na	nd	na	na	na	25.3 B	36.8 B	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1,2,4-trichlorobenzene	10.00	na	na	na	nd	na	na	na	5.73 B	4.98 B	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1,1,1-trichloroethane	10.00	na	na	na	nd	na	na	na	1.50 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	200
1,2,4-trime(ly)benzene	10.00	na	na	na	nd	na	na	na	1.92 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	12.3
1,3,5-trimethylbenzene	10.00	na	na	na	nd	na	na	na	1.8 J	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	12.3
xylenes (total)	15.00	na	na	na	nd	na	na	na	62.4	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	10000

TABLE 4 - CONTINUED
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS - FEBRUARY 11, 2003
HERCULES, INC.
HATTIESBURG, MISSISSIPPI

Notes:

- ¹ PQL = Laboratory Method Practical Quantitation Limit and represents the minimum concentration for which a sample can reliably be quantified.
- ² Target Remediation Goals (TRG) are taken from the Tier 1 Target Remedial Goal Table of the Regulations Concerning Brownfields Voluntary Cleanup and Redevelopment in Mississippi MDEQ, March 2001. Bold text indicates concentrations above applicable TRGs.
- ³ na = "not analyzed".
- ⁴ nd = "not detected" at or above the method detection limit.
- ⁵ J = Data flag for data for which the concentration is "estimated" because the level is below the PQL, but was detected.
- ⁶ B = Data flag for data for which was also detected in the associated method blank sample. Analyte was in blank greater than 5% of sample.

TABLE 5 STREAM SEDIMENT AND SURFACE WATER ANALYTICAL RESULTS FOR DIOXATHION - FEBRUARY 11, 2001 HERCULES, INC. HATTIESBURG, MISSISSIPPI						
TARGET PARAMETER	PQL (ppb) ¹	Concentration in parts per billion (ppb) ²				
		CM-1	CM-2	CM-3	CM-4	CM-5
SURFACE WATER						
Dioxenethion	2.19	nd ³	nd	3.16	BPQL ⁴	3.07
Dioxathion (cis)	4.75	nd	8.72	nd	nd	nd
Dioxathion (trans)	3.04	nd	nd	nd	nd	nd
STREAMBED SEDIMENT						
Dioxenethion	170	nd	nd	nd	nd	nd
Dioxathion (cis)	134	nd	nd	nd	nd	nd
Dioxathion (trans)	149	790	nd	1370	nd	448

Notes:

- ¹ Represents the reporting limit or practical quantitation limit (PQL) of the analytical method in parts per billion (ppb).
- ² Results are presented in ppb with reference to the stream location (CM) from which the sample was collected.
- ³ nd = "Not Detected" at or above the method detection limit.
- ⁴ BPQL = "Below the Practical Quantitation Limit" of the analytical method in ppb.

TABLE 6 SURFACE WATER AND STREAM SEDIMENT SAMPLE ANALYTICAL RESULTS FOR VOC - FEBRUARY 11, 2003 HERCULES, INC. HATTIESBURG, MISSISSIPPI						
TARGET PARAMETER	PQL (ppb) ¹	Concentration in parts per billion (ppb) ²				
		CM-1	CM-2	CM-3	CM-4	CM-5
VOLATILE ORGANICS SURFACE WATER						
Benzene	10.00	2.82 J ³	1.17 J	3.66 J	2.25 J	4.04 J
Carbon Tetrachloride	10.00	3.03 J	1.48 J	nd ⁴	nd	nd
Chlorethane	12.00	20.50	15.60	8.42 J	3.43 J	nd
Chloroform	10.00	2.34 J	nd	nd	nd	nd
Napthalene	11.00	25.7 B ⁵	20.3 B	20.1 B	13.0 B	7.51 B
1,2,3-Trichlorobenzene	10.00	32.2 B	24.8 B	23.0 B	12.2 B	5.54 B
1,2,4-Trichlorobenzene	10.00	3.36 B	2.37 B	2.13 B	1.26 B	nd
VOLATILE ORGANICS STREAMBED SEDIMENT						
Benzene	na ⁶	3.1 J	nd	nd	1.53 J	nd
Bromomethane	na	nd	3.1 J	nd	nd	2.11 J
n-Butylbenzene	na	3.97 J	1.65 J	nd	nd	nd
Tert-Butylbenzene	na	1.76 J	nd	nd	nd	nd
1,3-Dichlorobenzene	na	3.35 J	3.96 J	5.07 J	1.72 J	3.19 J
1,4-Dichlorobenzene	na	nd	nd	nd	nd	3.11 J
n-Propylbenzene	na	2.31 J	nd	nd	nd	nd
Napthalene	na	17.4 B	19.8 B	14.7 B	5.87 B	10.8 B
1,2,3-Trichlorobenzene	na	18.0 B	23.8 B	21.3 B	9.26 B	15.1 B
1,2,4-Trichlorobenzene	na	10.2 B	9.13 B	6.1 B	2.10 B	3.64 B
1,2,4-Trimethylbenzene	na	14.6 J	5.36 J	4.87 J	1.88 J	2.59 J
1,3,5-Trimethylbenzene	na	11.8 J	4.29 J	3.82 J	nd	2.24 J

Notes:

- ¹ Represents the reporting limit or practical quantitation limit (PQL) of the analytical method in parts per billion (ppb).
- ² Results are presented in ppb with reference to the stream location (CM) from which the sample was collected.
- ³ J = Data flag for data for which the concentration is "estimated because the level is below the PQL, but above the Method Detection Limit.
- ⁴ nd = "Not Detected" at or above the Method Detection Limit.
- ⁵ B = Data flag for data which was also detected in the associated method blank sample.
- ⁶ PQL values vary for each sample. See laboratory analytical data sheets.





Appendix B-2

Site Investigation Supplemental
Report (April 2003)

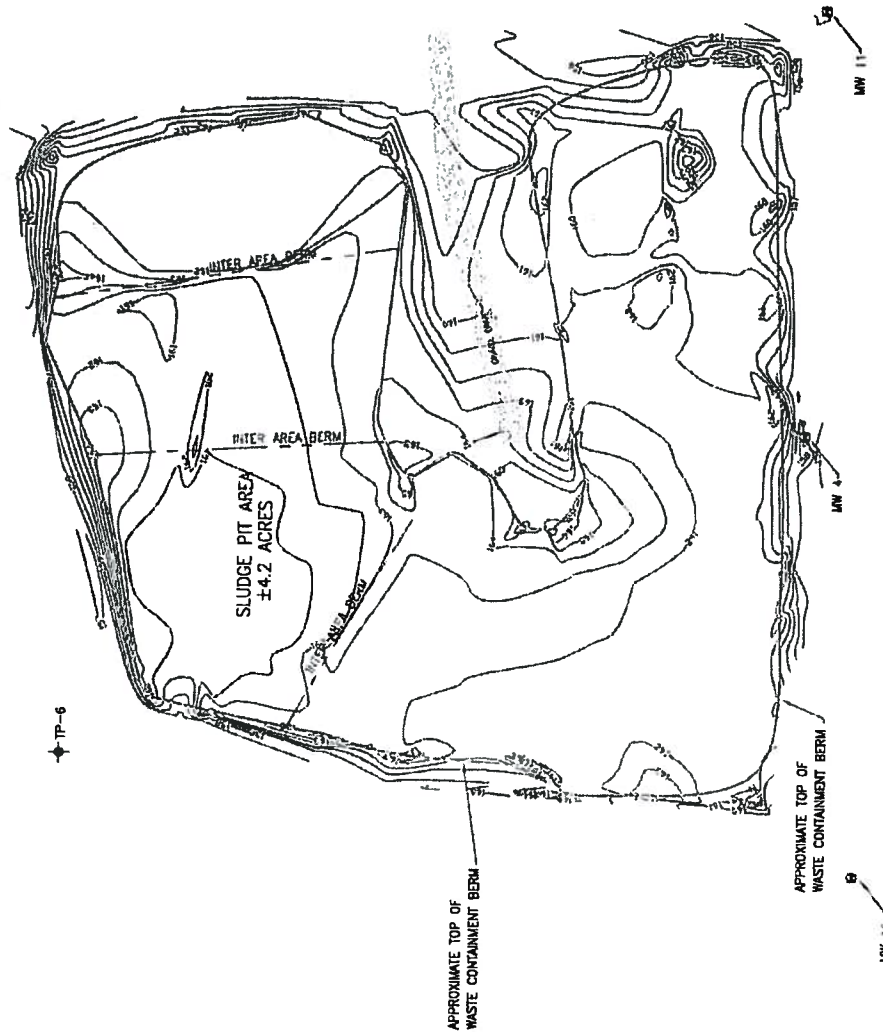




NOTE:
 1. TOPOGRAPHY OF SLUDGE PITS BASED ON TOPOGRAPHIC SURVEY PERFORMED BY ECO-SYSTEMS, INC. ON MAY 27, 2004.

LEGEND

- APPROXIMATE TOP OF WASTE CONTAINMENT BERM
- - - INTER AREA BERM
- EXISTING INDEX CONTOURS (5' INTERVAL)
- EXISTING CONTOURS (1' INTERVAL)
- APPROXIMATE SLUDGE PIT AREA
- ◆ EXISTING MONITORING WELL
- ◆ TP-6 PIEZOMETER LOCATION AND IDENTIFICATION



HERCULES
 CHEMICAL SPECIALTIES
Eco Systems, Inc.
 Consultants, Engineers and Scientists

SCALE	1"=40'	DATE	05-12-04
PROJECT NO.	HER24100	DATE	
PROJECT NO.	HER24100	DATE	
PROJECT NO.	HER24100	DATE	

LANDRILL-FIGURES.dwg
 FIGURE 3

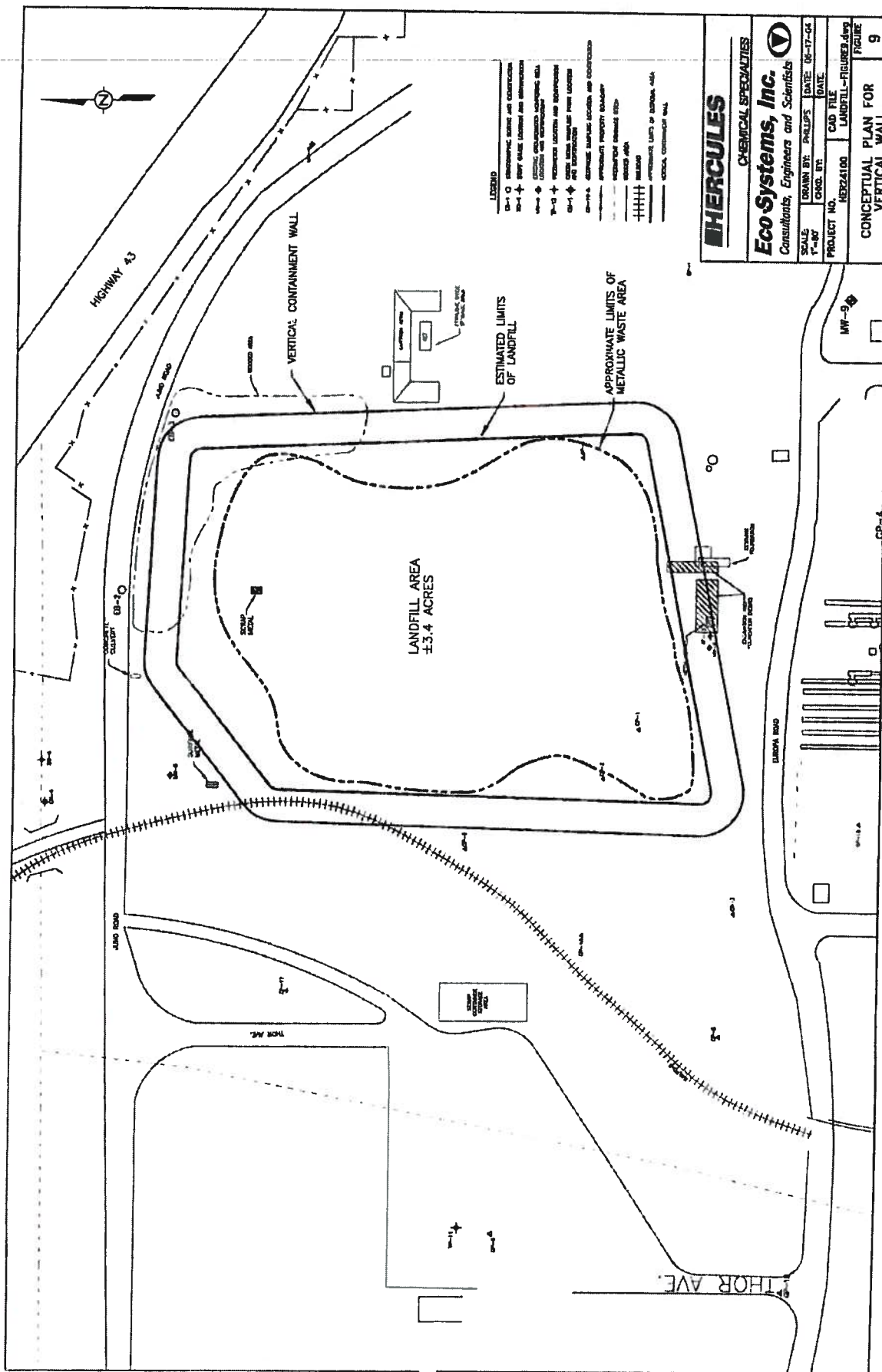


TABLE 2
SUMMARY OF TEMPORARY MONITORING WELL VOC ANALYTICAL DATA
 Samples Collected August 11 - 14, 2003
HERCULES, INC.
 Hattiesburg, Mississippi

Analytes	Concentrations in micrograms per Liter (µg/L)																TRG ¹
	GP-2 (Water)	GP-4 (Water)	GP-5 (Water)	GP-6 (Water)	GP-7 (Water)	GP-8 (Water)	GP-9 (Water)	GP-10 (Water)	GP-11 (Water)	GP-12 (Water)	GP-13 (Water)	GP-14 (Water)	GP-15 (Water)	GP-18 (Water)			
1,1-Dichloroethene	15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7	
Benzene	70500	269	<1	<1	89.6	<1	<1	<1	6.99	43	<1	6.19	14600	<1	<1	5	
Trichloroethene	2.33	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	
Toluene	4800	80.9	20.7	13.6	8.35	10.4	<1	<1	<1	<1	<1	<1	3.67	<1	<1	1000	
Chlorobenzene	71.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.17	<1	<1	100	
Bromodichloromethane	1.71	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.168	
n-Butylbenzene	3.76	1.23	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	243	
sec-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.66	<1	<1	243	
tert-Butylbenzene	<1	1.15	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.46	<1	<1	243	
Carbon Tetrachloride	223	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	
Chloroethane	18.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	3.64	
Chloroform	317	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.155	
2-Chlorotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	
4-Chlorotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4.19	<1	<1	NA	
1,2-Dibromo-3-chloropropane	6.06	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.2	
1,2-Dichlorobenzene	1.78	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.03	<1	<1	600	
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.99	<1	<1	5.48	
1,4-Dichlorobenzene	2.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.56	<1	<1	75	
1,1-Dichloroethane	15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	798	
1,2-Dichloroethane	27.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	
cis-1,2-Dichloroethene	46.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	70	
1,2-Dichloropropane	20.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	
Ethyl benzene	115	5.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.54	<1	<1	700	
Hexachlorobutadiene	1.11	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.859	

Notes:

< indicates analyte not detected at or above listed method detection limit (MDL).
 PQL is set as low point on the curve.
 J result is estimated concentration above MDL but below PQL.
 NA - Not applicable.
¹ Target Remediation Goals (TRG) are taken from the Tier 1 Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001. Bold text indicates concentration above applicable TRGs.

TABLE 2 (Continued)
SUMMARY OF TEMPORARY MONITORING WELL VOC ANALYTICAL DATA

August 11 - 14, 2003

HERCULES, INC.
Hattiesburg, Mississippi

Analytes	Concentrations in parts per billion (ug/L)																TRG ¹
	GP-2 (Water)	GP-4 (Water)	GP-5 (Water)	GP-6 (Water)	GP-7 (Water)	GP-8 (Water)	GP-9 (Water)	GP-10 (Water)	GP-11 (Water)	GP-12 (Water)	GP-13 (Water)	GP-14 (Water)	GP-15 (Water)	GP-18 (Water)			
Isopropylbenzene	2.1	4.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.19	<1	679		
p-Isopropyltoluene	61.7	33.8	<1	<1	<1	11.1	<1	<1	<1	<1	<1	<1	2.27	<1	NA		
Naphthalene	20.4	16.45	<5	<5	<5	52.4	<5	<5	<5	<5	<5	<5	4.19 J	<5	6.2		
n-Propylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	243		
Styrene	4.49	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.47	<1	100		
Tetrachloroethene	30.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5		
1,2,3-Trichlorobenzene	8.16	3.88 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	3.16 J	<5	NA		
1,2,4-Trichlorobenzene	10.1	3.03 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	70		
1,1,2-Trichloroethane	39.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5		
1,2,4-Trimethylbenzene	5.33	10.67	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	12.3		
1,3,5-Trimethylbenzene	3.76	4.08	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	12.3		
Vinyl chloride	3.07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2		
Xylenes (total)	466	12.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.82	<1	10000		

Notes:

< indicates analyte not detected at or above listed method detection limit (MDL).

PQL is set as low point on the curve.

J result is estimated concentration above MDL but below PQL.

NA - Not applicable.

¹ Target Remediation Goals (TRG) are taken from the Tier 1 Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001. Bold text indicates concentration above applicable TRGs.

TABLE 3
SUMMARY OF TEMPORARY MONITORING WELL DIOXATHION ANALYTICAL DATA
 Samples Collected August 28, 2003
HERCULES, INC.
 Hattiesburg, Mississippi

Analytes	Concentrations in micrograms per Liter (µg/L)																	TRG ¹
	GP-02 (Water)	GP-04 (Water)	GP-05 (Water)	GP-06 (Water)	GP-07 (Water)	GP-08 (Water)	GP-09 (Water)	GP-10 (Water)	GP-11 (Water)	GP-12 (Water)	GP-13 (Water)	GP-14 (Water)	GP-15 (Water)	GP-17 (Water)	GP-18 (Water)			
Dioxenethion	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA	
Dioxathion (cis)	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA	
Dioxathion (trans)	<0.4	1.92	<0.4	<0.4	0.604	1.52	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA	
Total Dioxathion (cis and trans)	<0.8	1.92	<0.8	<0.8	0.604	1.52	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	54.8	

Notes:

PQLs are the lowest point on the calibration curve.

< indicates analyte not detected at or above listed method detection limit (MDL).

NA - Not applicable.

¹ Target Remediation Goals (TRG) are taken from the Tier 1 Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001. Bold text indicates concentration above applicable TRGs.

TABLE 4
SUMMARY OF SOIL VOC ANALYTICAL DATA
 Samples Collected August 11 - 14, 2003
 HERCULES, INC.
 Hattiesburg, Mississippi

Analytes	Concentrations in micrograms per kilogram (µg/Kg)		
	GP-4 (Soil)	TRG ¹	
		Restricted	Unrestricted
1,1-Dichloroethene	<5.25	118 ^{***}	77.2
Benzene	62	1360	887
Trichloroethene	<5	7920	5170
Toluene	43.4	38000	38000
Chlorobenzene	<5	1190	1190
Bromodichloromethane	<5	1890	1240
n-Butylbenzene	<5	81800000	3130000
sec-Butylbenzene	<5	81800000	3130000
tert-Butylbenzene	<5	81800000	3130000
Carbon Tetrachloride	<5	569	371
Chloroethane	<5.55	1970000	220000
Chloroform	<5	478	312
2-Chlorotoluene	9.5	NA	NA
4-Chlorotoluene	4.47 J	NA	NA
1,2-Dibromo-3-chloropropane	<5	99.9	99.9
1,2-Dichlorobenzene	4.09 J	279000	279000
1,3-Dichlorobenzene	<5	1840000	70400
1,4-Dichlorobenzene	4.56 J	238000	26600
1,1-Dichloroethane	<15.5	116000	116000
1,2-Dichloroethane	<5	621	406
cis-1,2-Dichloroethene	<5	1210000	782000
1,2-Dichloropropane	<5	445	445
Ethyl benzene	19	395000	395000
Hexachlorobutadiene	<5	135	88.2
Isopropylbenzene	1.04 J	9430	9430
p-Isopropyltoluene	<5	NA	NA
Naphthalene	<5.5	247000	194000
n-Propylbenzene	7.64	490000	490000
Styrene	23.5	384000	384000
Tetrachloroethene	26	18200	11900
1,2,3-Trichlorobenzene	<6.8	NA	NA
1,2,4-Trichlorobenzene	<6.25	824000	782000
1,1,2-Trichloroethane	<5	1670	1090
1,2,4-Trimethylbenzene	36	102000000	3910000
1,3,5-Trimethylbenzene	22.2	436000	436000
Vinyl chloride	<5	939	426
Xylenes (total)	304	318000	318000

Notes:

< indicates analyte not detected at or above listed method detection limit (MDL).

PQL is set as low point on the curve.

J result is estimated concentration above MDL but below PQL.

NA - Not applicable.

¹ Target Remediation Goals (TRG) are taken from the Tier 1 Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001.

Bold text indicates concentration above most conservative applicable TRGs.

TABLE 5
SUMMARY OF MONITORING WELL ANALYTICAL RESULTS
Samples Collected August 28, 2003
HERCULES, INC.
Hattiesburg, Mississippi

Analytes	Concentrations in micrograms per Liter (µg/L)				TRG ¹
	MW-01 (Water)	MW-04 (Water)	MW-10 (Water)	MW-11 (Water)	
Volatile Organic Compounds					
Bromoform	<1	<1	1.55	<1	8.48
tert-Butylbenzene	1.34	<1	<1	<1	243
1,2-Dichlorobenzene	2.7	<1	<1	<1	600
1,3-Dichlorobenzene	1.39	<1	<1	<1	5.48
1,4-Dichlorobenzene	2.2	<1	<1	<1	75
Hexachlorobutadiene	5.05	<1	<1	<1	0.859
p-Isopropyltoluene	1.34	<1	<1	<1	NA
1,2,3-Trichlorobenzene	1.40 J	<5	<5	<5	NA
1,2,4-Trimethylbenzene	1.23	<1	<1	<1	12.3
Dioxathion					
Dioxenethion	<0.4	6.34	<0.4	6.24	NA
Dioxathion (cis)	<0.4	1.82	<0.4	<0.4	NA
Dioxathion (trans)	<0.4	<0.4	<0.4	<0.4	NA
Total Dioxathion (cis and trans)	<0.8	1.82	<0.8	<0.8	54.8

Notes:

< indicates analyte not detected at or above listed method detection limit (MDL).

PQL is set as low point on the curve.

J result is estimated concentration above MDL but below PQL.

NA - Not applicable

¹ Target Remediation Goals (TRG) are taken from the Tier 1 Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001. Bold text indicates concentrations above applicable TRGs.

TABLE 6
SUMMARY OF STREAM SEDIMENT
AND SURFACE WATER ANALYTICAL DATA
Samples Collected September 3, 2003
HERCULES, INC.
Hattiesburg, Mississippi

Analytes	Concentration in micrograms per Liter ($\mu\text{g/L}$) or parts per billion.			
	CM-0 (Water)	CM-0 (Sediment)	CM-1 (Water)	CM-1 (Sediment)
Volatile Organic Compounds				
Toluene	<1	<5	4.66	7.28
Chlorobenzene	<1	<5	6.58	<5
Bromobenzene	4.18	4.79 J	13	7.67
2-Chlorotoluene	3.4	<5	2.53	<5
4-Chlorotoluene	4.61	<5	4.17	<5
1,2-Dichlorobenzene	3.44	<5	3.76	3.21 J
1,3-Dichlorobenzene	3.66	<5	3.42	<5
1,4-Dichlorobenzene	7.54	4.54 J	6.35	5.07
1,2-Dichloroethane	<1	<5	1.71	<5
Ethyl benzene	4.14	<5	1.55	<5
Naphthalene	<5	<5	14.7	<5
Styrene	3.16	<5	2.36	<5
1,2,3-Trichlorobenzene	<5	<5	6.64	<5
1,2,4-Trichlorobenzene	<5	<5	1.80 J	<5
1,2,4-Trimethylbenzene	<1	<5	1.3	<5
1,3,5-Trimethylbenzene	1.04	<5	1.57	<5
Xylenes (total)	8.31	<5	7.41	<5
Dioxathion				
Dioxenethion	<0.4	<0.4	<0.4	<0.4
Dioxathion (cis)	<0.4	<0.4	<0.4	<0.4
Dioxathion (trans)	<0.4	<0.4	<0.4	<0.4

Notes:

< Indicates analyte not detected at or above listed method detection limit (MDL).

PQL is set as low point on the curve.

J result is estimated concentration above MDL but below PQL.

Water concentration in micrograms per Liter ($\mu\text{g/L}$).

Sediment concentration in micrograms per kilogram ($\mu\text{g/kg}$).

TABLE 7
SUMMARY OF QUALITY ASSURANCE / QUALITY CONTROL
 Samples Collected August 12 - 13, 2003
HERCULES, INC.
 Hattiesburg, Mississippi

Analytes	Concentrations in micrograms per Liter (µg/L)										TRG ¹
	BD-1 (Water - Blind Duplicate)	GP-7 (Water)	BD-2 - Blind Duplicate	GP-10 (Water)	BD-3 (Water - Blind Duplicate)	MW-1 (Water)	RS-1 (Rinsate)	GP-8 (Water)	GP-8 Dup (Water)	TRG ¹	
Benzene	26.13	89.6	<1	<1	<1	<1	<1	<1	<1	<1	5
Toluene	<1	8.35	<1	<1	<1	<1	<1	10.4	7.5	<1	1000
tert-Butylbenzene	<1	<1	<1	<1	<1	1.34	<1	<1	<1	<1	243
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	2.7	<1	<1	<1	<1	600
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	1.39	<1	<1	<1	<1	5.48
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	2.2	<1	<1	<1	<1	75
Hexachlorobutadiene	<1	<1	<1	<1	<1	5.05	<1	<1	<1	<1	0.859
p-isopropyltoluene	<1	<1	<1	<1	<1	1.34	<1	11.1	11.5	<1	NA
Naphthalene	<5	<5	<5	<5	<5	<5	<5	52.4	55.7	<5	6.2
1,2,3-Trichlorobenzene	<5	<5	<5	<5	<5	1.4J	<5	<5	<5	<5	NA
1,2,4-Trimethylbenzene	<5	<5	<5	<5	<5	1.23	<5	<5	<5	<5	12.3

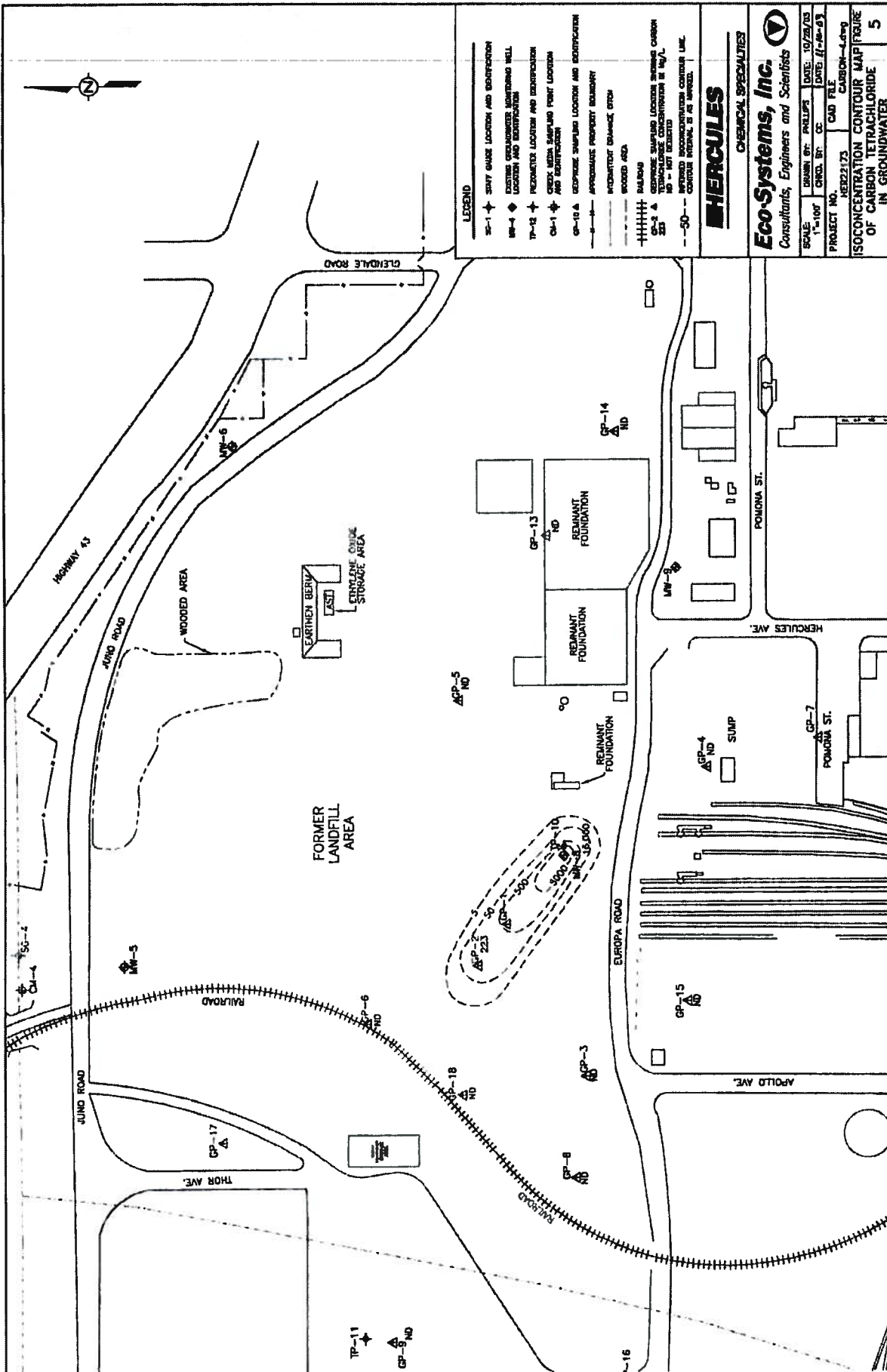
Analytes	Concentrations in micrograms per Liter (µg/L)								TRG ¹	
	BD-02 (Water - Blind Duplicate)	GP-10 (Water)	BD-3 (Water - Blind Duplicate)	MW-1 (Water)	RS-01 (Rinsate)	GP-08 (Water)	GP-08 Dup (Water)	GP-08 Matrix Spike Dup (Water)		TRG ¹
Dioxenethion	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	4.56	4.85	NA
Dioxathion (cis)	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	5.3	4.43	NA
Dioxathion (trans)	<0.4	<0.4	<0.4	<0.4	<0.4	1.52	<0.4	4.81	4.77	NA
Total Dioxathion (cis and trans)	<0.8	<0.8	<0.8	<0.8	<0.8	1.52	<0.8	NA	NA	54.8

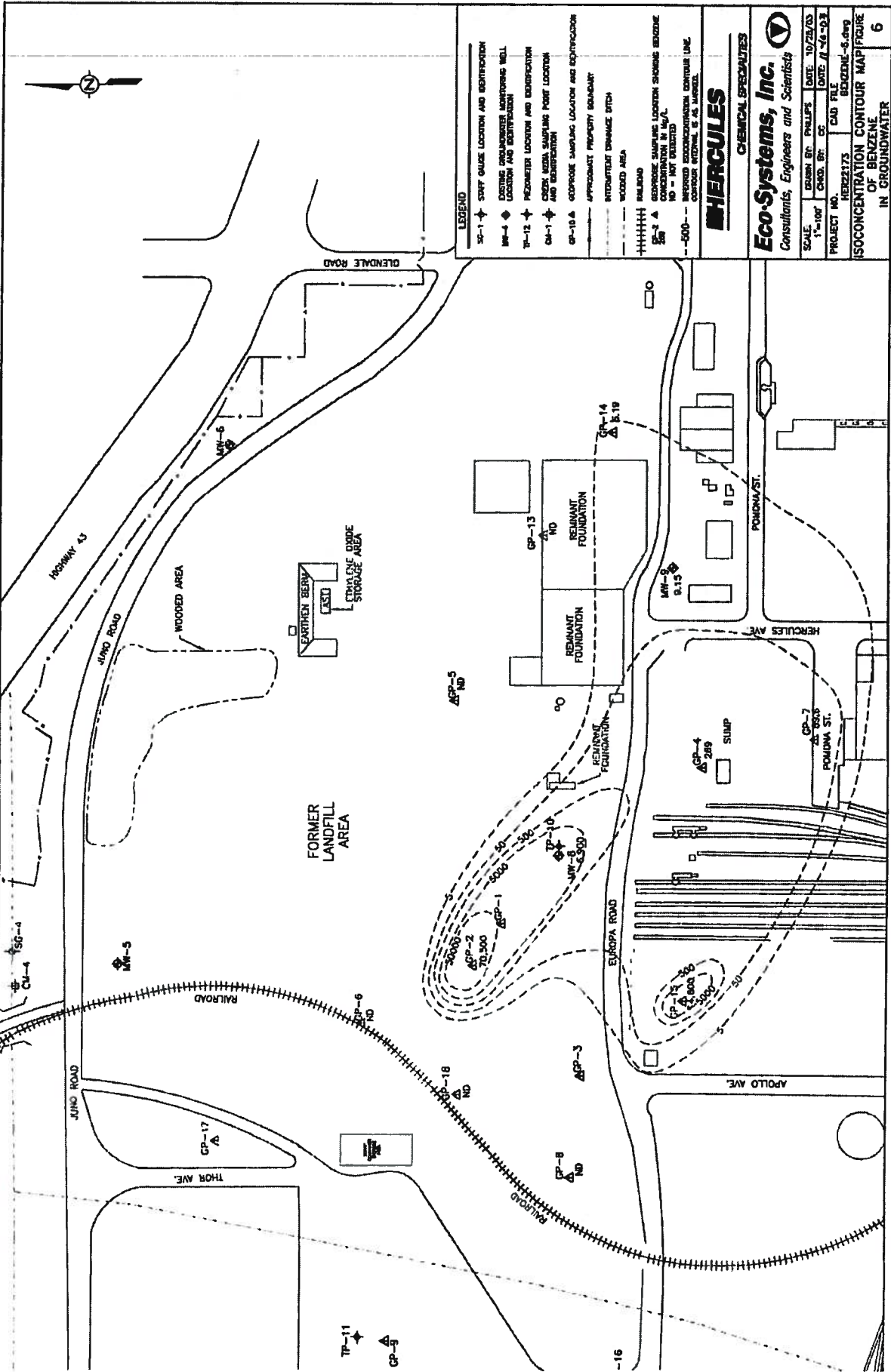
Notes:

< indicates analyte not detected at or above listed method detection limit (MDL).
 PQL is set as low point on the curve.

NA - Not applicable.

¹ Target Remediation Goals (TRG) are taken from the Tier 1 Goals Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2001. Bold text indicates concentration above applicable TRGs.





LEGEND

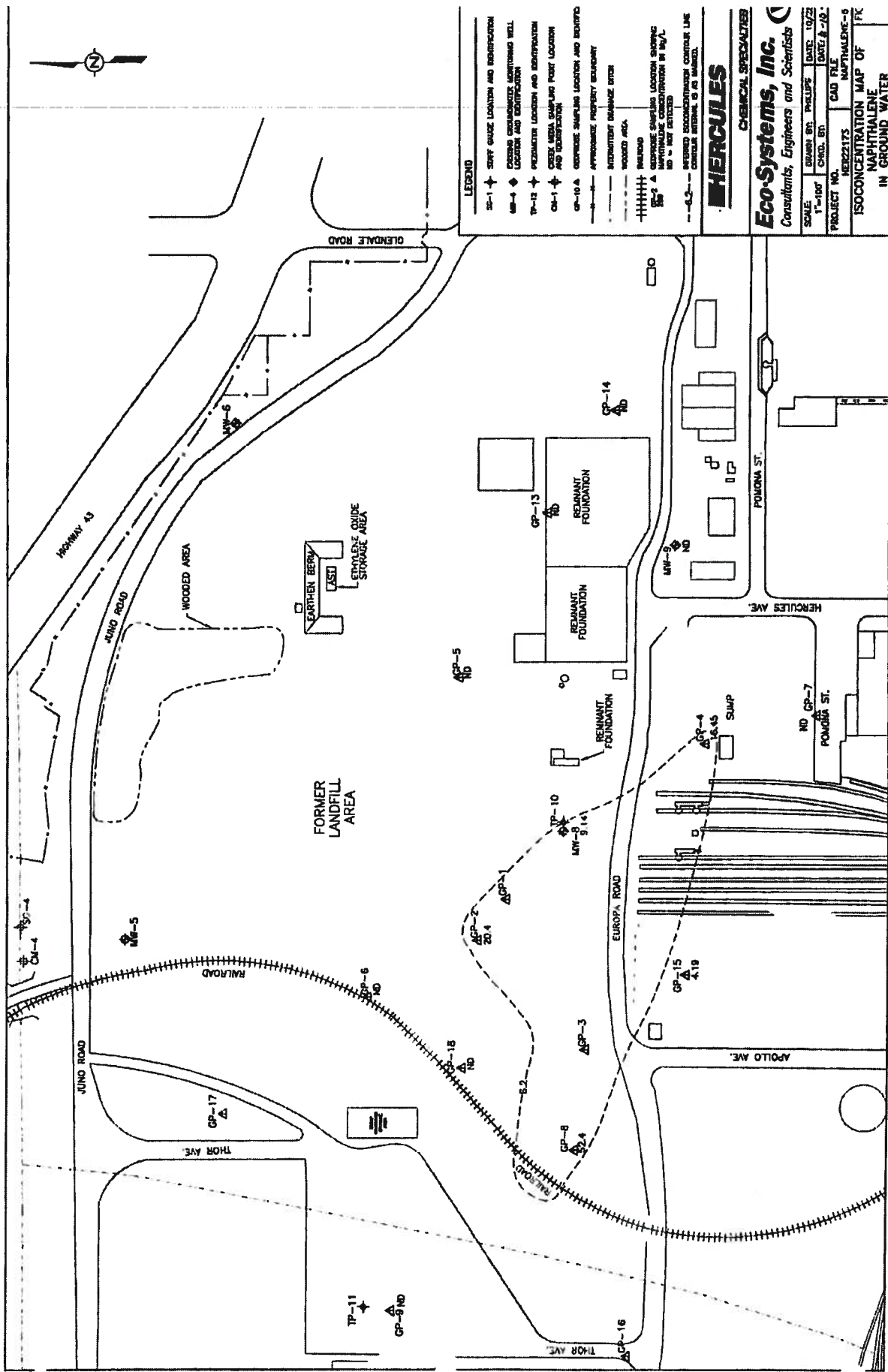
- SP-1 → SPILL GULCH LOCATION AND IDENTIFICATION
- MW-4 ◆ MONITORING POINT LOCATION AND IDENTIFICATION
- TP-12 ◆ TRENCH LOCATION AND IDENTIFICATION
- GM-1 ◆ GROUND MOUNTED SAMPLING POINT LOCATION AND IDENTIFICATION
- GP-18.4 ◆ GROUNDWATER SAMPLING LOCATION AND IDENTIFICATION
- APPROXIMATE PROPERTY BOUNDARY
- INTERMITTENT DRAINAGE DITCH
- ||||| WOODED AREA
- ||||| RAILROAD
- △ GROUNDWATER SAMPLING LOCATION SHOWING BENZENE CONCENTRATION IN µg/L
- △ NO - NOT DETECTED
- △ MEASURED CONCENTRATION CONTAINING LINE
- △ 5000 - CONTOUR INTERVAL: 500 µg/L

HERCULES
CHEMICAL SPECIMATES

Eco-Systems, Inc.
Consultants, Engineers and Scientists

SCALE: 1"=100'
 DRAWN BY: PHILIPS
 CHECKED BY: []
 DATE: 10/29/03
 DATE: 1/14/04

PROJECT NO. HEN22173
 CAD FILE: BEZENE-3.dwg
 ISOCENTRATION CONTOUR MAP FIGURE 6



LEGEND

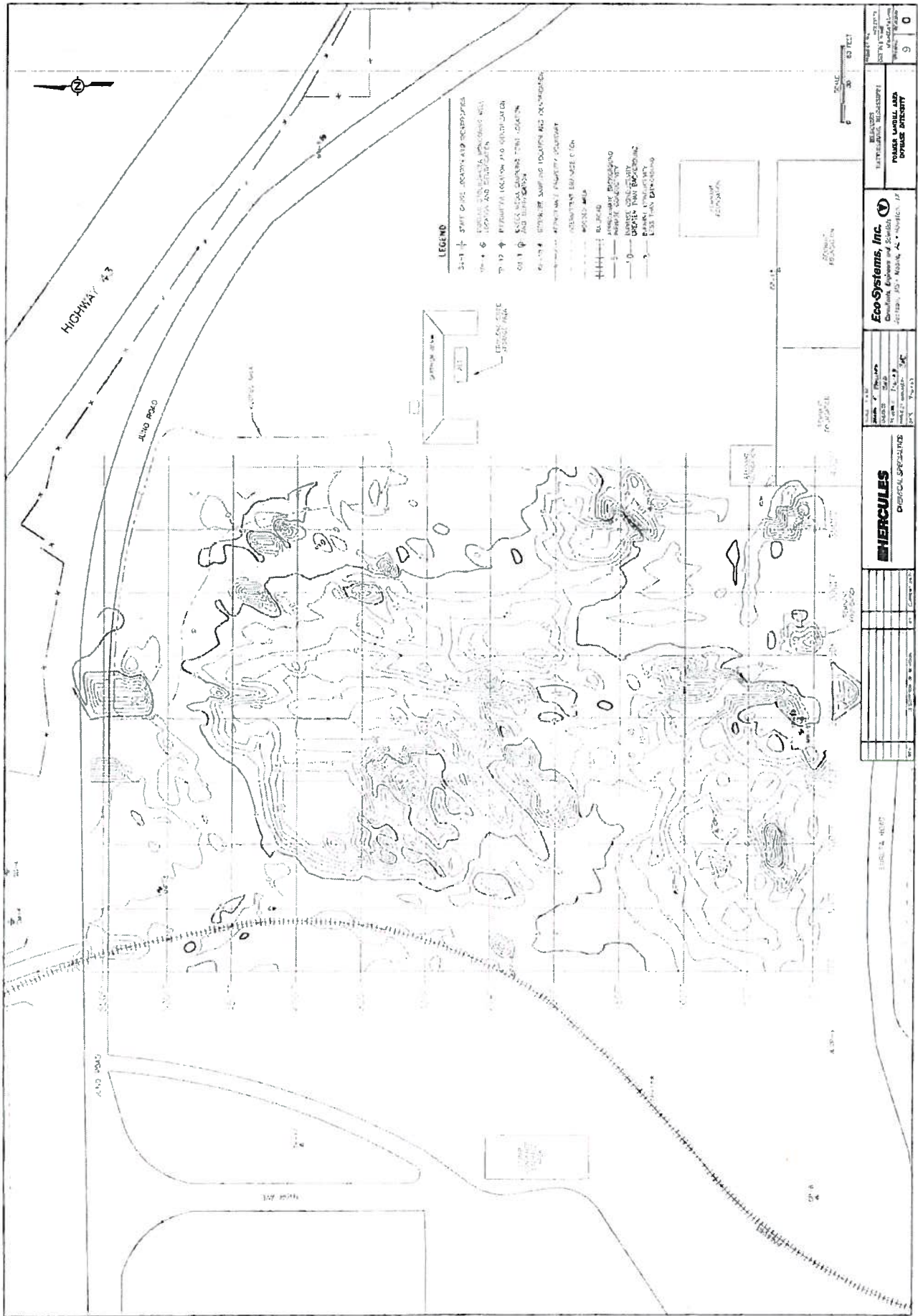
- SC-1 Staff Gauge Location and Identification
- MW-4 Existing Groundwater Monitoring Well Location and Identification
- TP-13 Piezometer Location and Identification
- CH-1 Check Meter Structure Point Location and Identification
- GP-10 A Groundwater Sampling Location and Identifier
- GP-1 A Groundwater Property Boundary
- APCP-1 ACP-1 ACP-2 ACP-3 ACP-4 ACP-5 ACP-6 ACP-7 ACP-8 ACP-9 ACP-10 ACP-11 ACP-12 ACP-13 ACP-14 ACP-15 ACP-16 ACP-17 ACP-18 ACP-19 ACP-20 ACP-21 ACP-22 ACP-23 ACP-24 ACP-25 ACP-26 ACP-27 ACP-28 ACP-29 ACP-30 ACP-31 ACP-32 ACP-33 ACP-34 ACP-35 ACP-36 ACP-37 ACP-38 ACP-39 ACP-40 ACP-41 ACP-42 ACP-43 ACP-44 ACP-45 ACP-46 ACP-47 ACP-48 ACP-49 ACP-50 ACP-51 ACP-52 ACP-53 ACP-54 ACP-55 ACP-56 ACP-57 ACP-58 ACP-59 ACP-60 ACP-61 ACP-62 ACP-63 ACP-64 ACP-65 ACP-66 ACP-67 ACP-68 ACP-69 ACP-70 ACP-71 ACP-72 ACP-73 ACP-74 ACP-75 ACP-76 ACP-77 ACP-78 ACP-79 ACP-80 ACP-81 ACP-82 ACP-83 ACP-84 ACP-85 ACP-86 ACP-87 ACP-88 ACP-89 ACP-90 ACP-91 ACP-92 ACP-93 ACP-94 ACP-95 ACP-96 ACP-97 ACP-98 ACP-99 ACP-100
- APCP-1 ACP-1 ACP-2 ACP-3 ACP-4 ACP-5 ACP-6 ACP-7 ACP-8 ACP-9 ACP-10 ACP-11 ACP-12 ACP-13 ACP-14 ACP-15 ACP-16 ACP-17 ACP-18 ACP-19 ACP-20 ACP-21 ACP-22 ACP-23 ACP-24 ACP-25 ACP-26 ACP-27 ACP-28 ACP-29 ACP-30 ACP-31 ACP-32 ACP-33 ACP-34 ACP-35 ACP-36 ACP-37 ACP-38 ACP-39 ACP-40 ACP-41 ACP-42 ACP-43 ACP-44 ACP-45 ACP-46 ACP-47 ACP-48 ACP-49 ACP-50 ACP-51 ACP-52 ACP-53 ACP-54 ACP-55 ACP-56 ACP-57 ACP-58 ACP-59 ACP-60 ACP-61 ACP-62 ACP-63 ACP-64 ACP-65 ACP-66 ACP-67 ACP-68 ACP-69 ACP-70 ACP-71 ACP-72 ACP-73 ACP-74 ACP-75 ACP-76 ACP-77 ACP-78 ACP-79 ACP-80 ACP-81 ACP-82 ACP-83 ACP-84 ACP-85 ACP-86 ACP-87 ACP-88 ACP-89 ACP-90 ACP-91 ACP-92 ACP-93 ACP-94 ACP-95 ACP-96 ACP-97 ACP-98 ACP-99 ACP-100
- WOODED AREA
- MANHOLE
- GROUNDWATER SAMPLING LOCATION SHOWING NAPHTHALENE CONCENTRATION IN $\mu\text{g/L}$
- ISOCONCENTRATION CONTOUR LINE
- CONTOUR INTERVAL IS 10 $\mu\text{g/L}$

HERCULES
CHEMICAL SPECIALTIES
Eco-Systems, Inc.
 Consultants, Engineers and Scientists

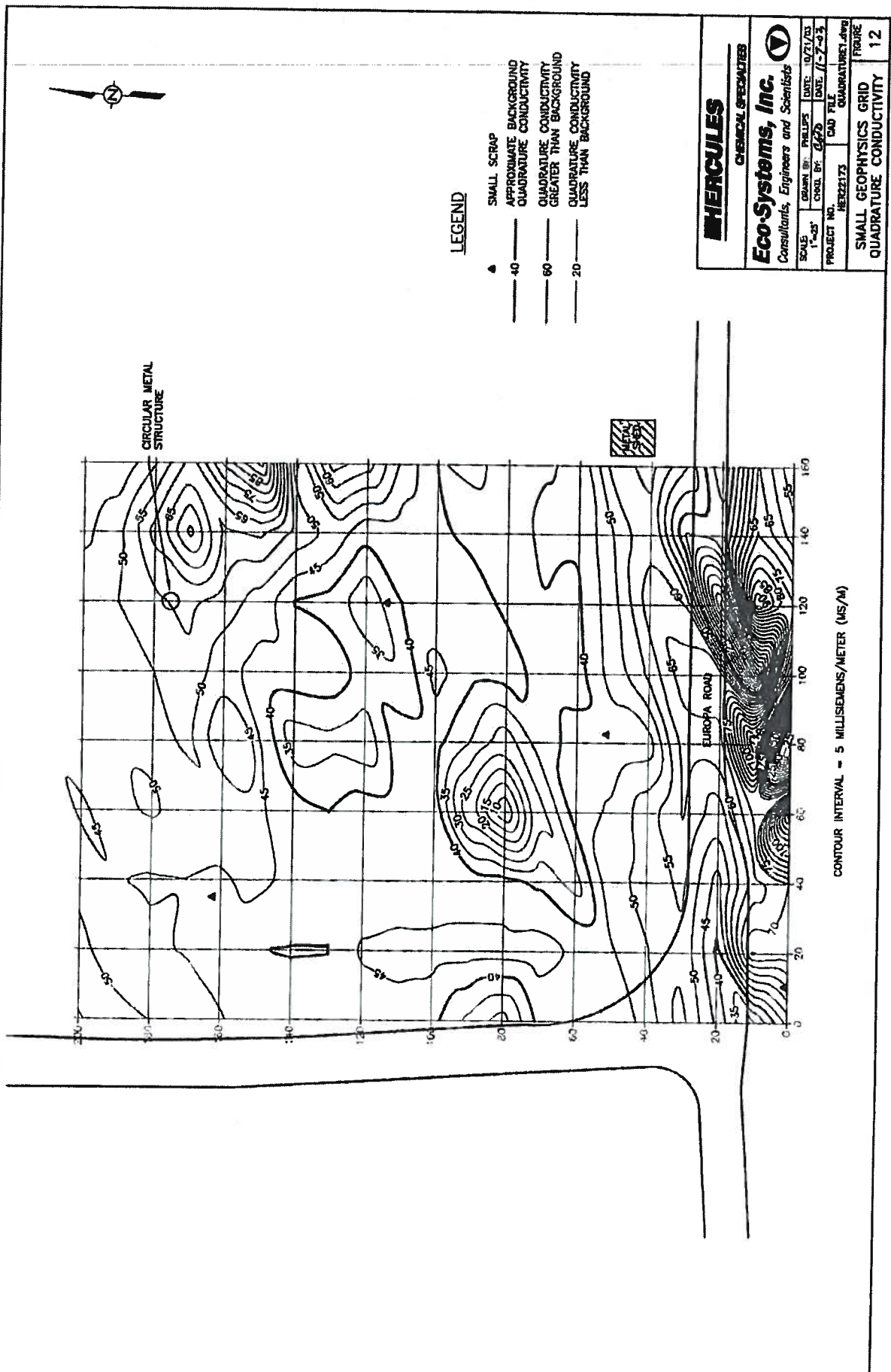
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 1"=100' CROD. BY: DATE: 8-10

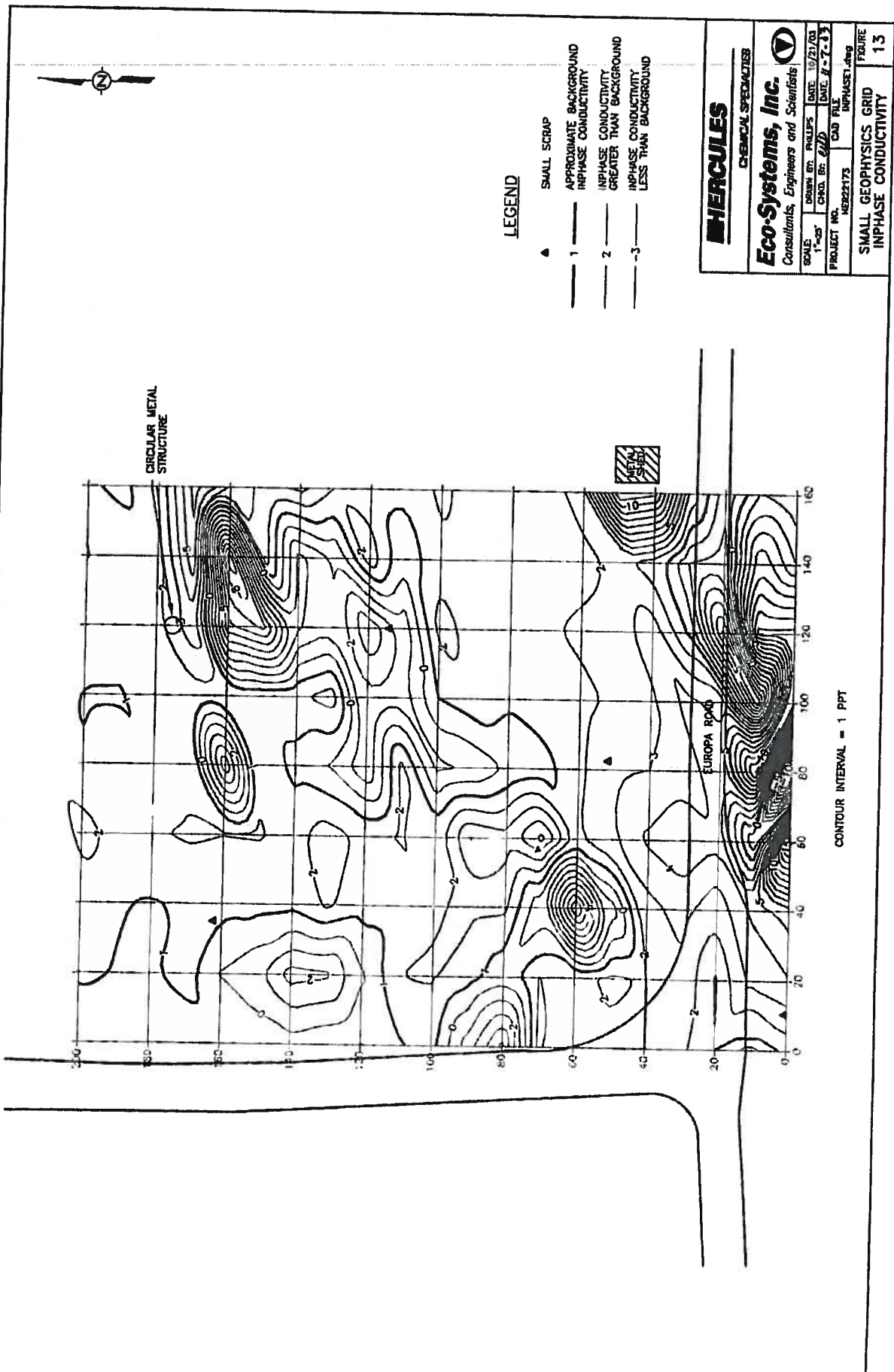
PROJECT NO. HER22173 CAD FILE NAPHTHALENE-6

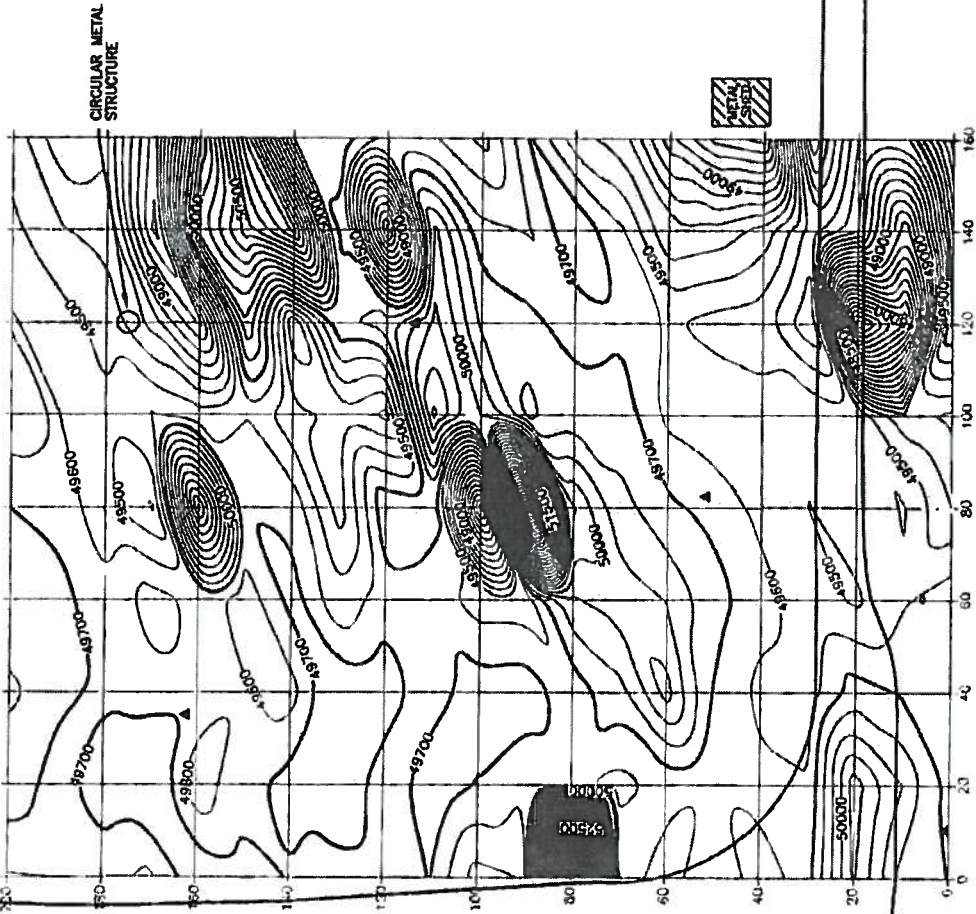
**ISOCONCENTRATION MAP OF
 NAPHTHALENE
 IN GROUND WATER**



<p>HERCULES DIAGNOSTIC SERVICES</p>		<p>Eco-Systems, Inc. Consulting Engineers and Scientists 1001 North 1st Street, Suite 100 Tomball, TX 77375 Tel: 281-291-1111 Fax: 281-291-1112 www.ecosystems.com</p>		<p>PROJECT NO. 0205 SHEET NO. 9 OF 10 DATE: 06/01/06</p>	
<p>FIGURE 14 - REPORT</p>		<p>PROJECT: POWER LANE AND BRIDGE PROPERTY</p>		<p>SCALE: 1" = 30' (VERTICAL) 1" = 60' (HORIZONTAL)</p>	







LEGEND

- ▲ SMALL SCRAP
- 49700 APPROXIMATE BACKGROUND TOTAL MAGNETIC INTENSITY
- 50000 TOTAL MAGNETIC INTENSITY GREATER THAN BACKGROUND
- 49500 TOTAL MAGNETIC INTENSITY LESS THAN BACKGROUND

HERCULES
CHEMICAL SPECIALTIES

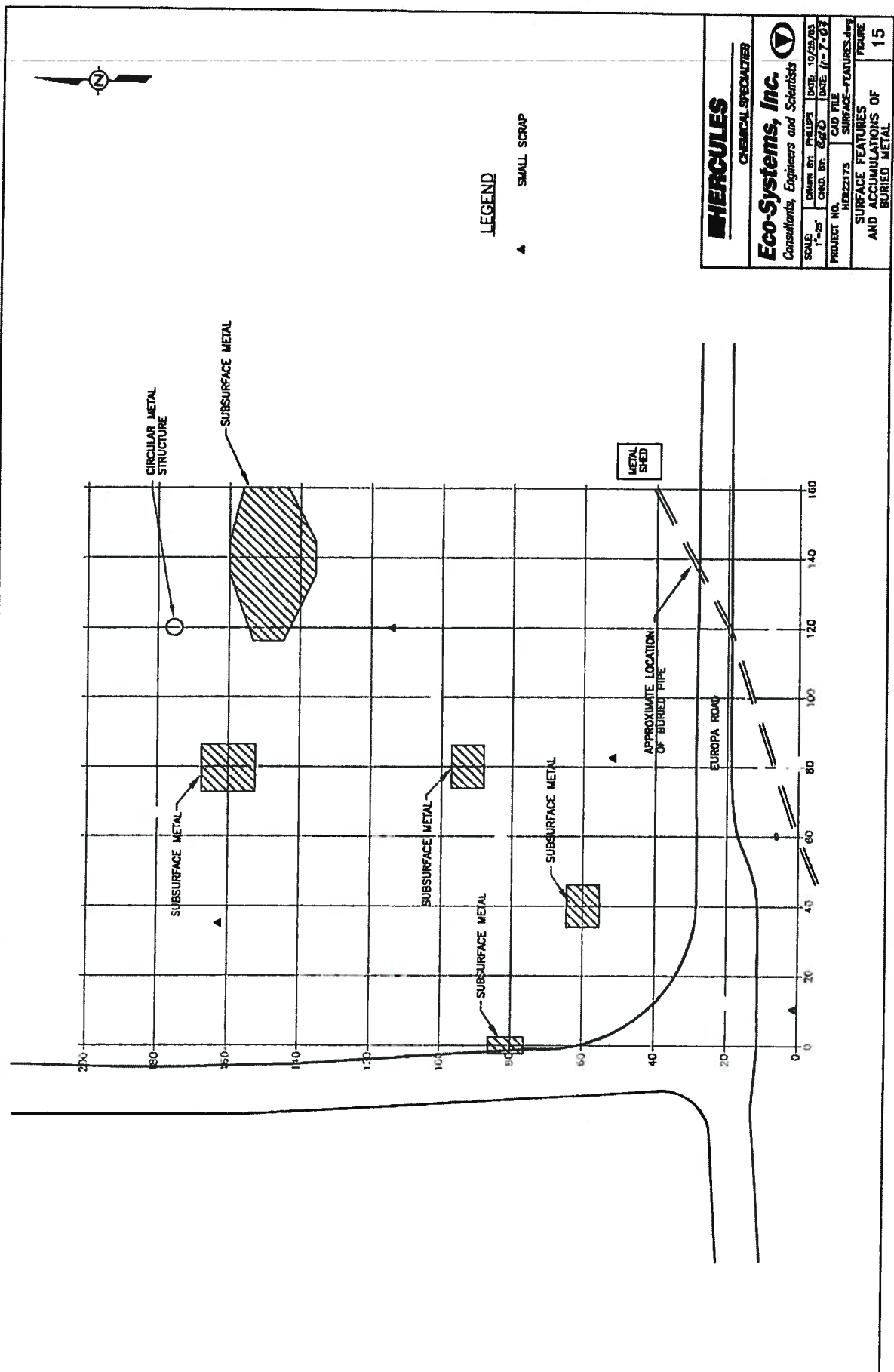
Eco-Systems, Inc.
Consultants, Engineers and Scientists

SCALE: 1"=40'	DRAWN BY: PJP	DATE: 10/21/03
PROJECT NO. HER22173	CAD FILE	DATE: 11-1-03

SMALL GEOPHYSICS GRID
TOTAL MAGNETIC INTENSITY

CONTOUR INTERVAL = AS SHOWN

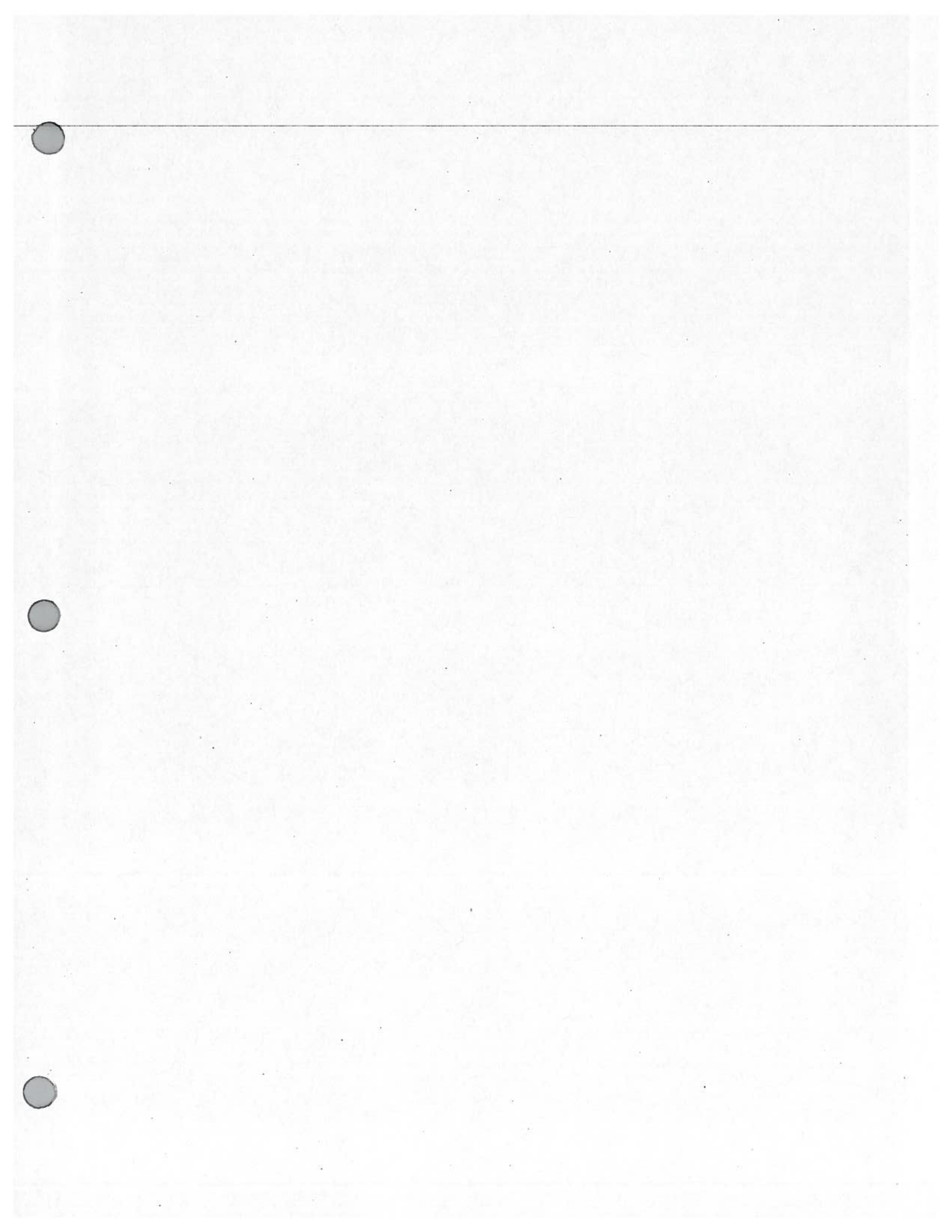
FIGURE 14



HERCULES
CHEMICAL SPECIALTIES

Eco-Systems, Inc.
Consultants, Engineers and Scientists

SCALE: 1"=25'	DRAWN BY: PHLOPS	DATE: 10/29/03
	CHKD. BY: GGO	DATE: 11-7-03
PROJECT NO. HER2173	CAD FILE SURFACE-FEATURES.dwg	
SURFACE FEATURES AND ACCUMULATIONS OF BURIED METAL		FIGURE 15





Appendix B-3

2009 Groundwater Assessment
Report (11-10-09)



TABLE 2
GROUNDWATER ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS
HERCULES, INC.
HATTIESBURG, MISSISSIPPI
(Parameters reported above the method detection limit)

Parameter	Monitoring Well ID						MDEQ TRG
	MW-20	MW-21	MW-22	MW-23'	MW-23 (Duplicate) ²	MW-24	
Acetone	<25	<1,200	86	<i>1,600</i>	<2,500	<25	608
Benzene	<1.0	<i>4,400</i>	9.8	<i>9,200</i>	<i>8,900</i>	<1.0	5.0
Chlorobenzene	<1.0	<i>170</i>	7.7	<i>190</i>	<i>200</i>	<1.0	100
Chloroform	<1.0	<i>6,800</i>	<1.0	<i>1,400</i>	<i>1,500</i>	<1.0	0.155
Methylene Chloride	<5.0	<250	<5.0	<i>290</i>	<500	<5.0	5.0
4-Methyl-2-pentanone	<10	<i>640</i>	11	<i>1,300</i>	<i>1,200</i>	<10	139
Toluene	<1.0	<i>4,800</i>	<1.0	<i>3,300</i>	<i>3,300</i>	<1.0	1,000

Notes: *Samples collected September 28, 2009*
All analytical results in µg/l (micrograms per liter)
Volatile Organic Compound analysis conducted per EPA Test Method 8260B
MDEQ-TRG – Mississippi Department of Environmental Quality-Target Remedial Goal
< = below method detection limit (MDL)
Dup – field duplicate
Bold red italics indicates concentration exceeds MDEQ-TRG
¹ *Method detection limit increased due to necessary sample dilution factor of 50*
² *Method detection limit increased due to necessary sample dilution factor of 100*

TABLE 3

**GROUNDWATER ANALYTICAL SUMMARY
SEMI-VOLATILE ORGANIC COMPOUNDS
HERCULES, INC.
HATTIESBURG, MISSISSIPPI
(Parameters reported above the method detection limit)**

Parameter	Monitoring Well ID						MDEQ TRG
	MW-20 ²	MW-21 ³	MW-22 ⁴	MW-23 ⁵	MW-23 ⁵ Duplicate)	MW-24	
1,1-Biphenyl	<9.5	<i>730</i>	<i>2,600</i>	280	<i>330</i>	<9.4	304
Phenol	<9.5	140	4,600	180	250	<9.4	21,900
Naphthalene	<9.5	<95	<190	<95	<95	<9.4	6.20
1,4-Dioxane	<9.5	<i>670</i>	<190	<i>850</i>	<i>1,100</i>	<9.4	6.09
3 & 4 Methylphenol	<9.5	160	<190	<i>490</i>	<i>610</i>	<9.4	201 ¹

- Notes:*
- Samples collected September 28, 2009*
 - All analytical results in µg/l (micrograms per liter)*
 - Semi-Volatile Organic Compound analysis conducted per EPA Test Method 8270C*
 - MDEQ-TRG – Mississippi Department of Environmental Quality-Target Remedial Goal*
 - < = below method detection limit*
 - Bold red italics indicates concentration exceeds MDEQ-TRG*
 - ¹ *Combined value for 3-Methylphenol (m-Cresol) and 4-Methylphenol (p-Cresol) TRGs*
 - ² *Method detection limit increased due to necessary sample dilution factor of 2*
 - ³ *Method detection limit increased due to necessary sample dilution factor of 10*
 - ⁴ *Method detection limit increased due to necessary sample dilution factor of 20 & 25*
 - ⁵ *Method detection limit increased due to necessary sample dilution factor of 10*

TABLE 4
GROUNDWATER ANALYTICAL SUMMARY
METALS
HERCULES, INC.
HATTIESBURG, MISSISSIPPI
(Parameters reported above the method detection limit)

Parameter	Monitoring Well ID						MDEQ TRG
	MW-20	MW-21	MW-22	MW-23	MW-23 Dup	MW-24	
Arsenic	<20	<20	<20	26	27	<20	5.000
Barium	84	65	130	51	52	280	2,000

Notes: *Samples collected September 28, 2009*
All analytical results in µg/l (micrograms per liter)
Metals analysis conducted per EPA Test Method 6010B & 7470A
MDEQ-TRG - Mississippi Department of Environmental Quality-Target Remedial Goal
< = below method detection limit

TABLE 5
GROUNDWATER ANALYTICAL SUMMARY
DELNAV
HERCULES, INC.
HATTIESBURG, MISSISSIPPI
(Parameters reported above the Practical Quantitation Limit)

Parameter	Monitoring Well ID						MDEQ TRG
	MW-20	MW-21	MW-22	MW-23	MW-23 Dup	MW-24	
Dioxenethion	<0.40	185	<0.40	<0.40	202	<0.40	---
Dioxathion (cis)	<0.40	4.0	<0.40	<0.40	21.1	<0.40	---
Dioxathion (trans)	<0.40	8.6	<0.40	<0.40	19.4	<0.40	---
Total Dioxathion ¹	<0.80	12.6	<0.80	<0.80	40.5	<0.80	54.8

Notes:

Samples collected September 28, 2009

All analytical results in µg/l (micrograms per liter)

Delnav analysis conducted per EPA Test Method 3510C (modified)

MDEQ-TRG - Mississippi Department of Environmental Quality-Target Remedial Goal

< = below the Practical Quantitation Limit (PQL)

--- = not applicable

Bold red italics indicates concentration exceeds MDEQ-TRG

¹ Combined number for dioxathion (cis), and dioxathion (trans)

TABLE 6
GROUNDWATER ANALYTICAL QA/QC SUMMARY
HERCULES, INC.
HATTIESBURG, MISSISSIPPI

Parameter	Rinsate Blank	Regular Sample MW-23	Duplicate Sample MW-23	Relative percent Difference
Acetone	<25	1600	<2500	NA
Benzene	<1.0	9200	8900	3.31
Chlorobenzene	<1.0	190	200	5.13
Chloroform	<1.0	1400	1500	6.90
Methylene chloride	<5.0	290	<500	NA
4-methyl-2-pentanone (MIBK)	<10	1300	1200	8.00
Toluene	<1.0	3300	3300	0.00
1,1-biphenyl	<9.4	260	330	23.7
1,4-dioxane	<9.4	790	990	22.5
3- & 4-methylphenol	<9.4	490	610	21.8
Phenol	<9.4	180	250	32.6
Arsenic	<20	26	27	3.77
Barium	11	51	52	1.94
Dioxenethion	<0.400	132	202	41.9
cis-Dioxathion	<0.400	17.6	21.1	18.1
trans-Dioxathion	<0.400	20.6	19.4	6.00

*Notes: All concentrations are ug/l.
Rinsate samples were collected by rinsing deionized water through sample tubing.
Duplicate sample was diluted during analysis 100X.*





Appendix B-4

2009 Hercules Draft Groundwater
Report (2SA09)



TABLE 3
SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS

Location	Concentrations in µg/L				
	Benzene	Carbon Tetrachloride	Chlorobenzene	Toluene	Chloroform
MW-04	< 1.0	< 1.0	< 1.0	< 1	1.0
MW-04 FD01	< 1.0	< 1.0	< 1.0	< 1	1.0
RPD	0%	0%	0%	0%	0%
MW-13	790	2,000	29	< 25	310
MW-13 FD02	640	2,100	26	< 25	500
RPD	21.0%	4.87%	3.92%	0%	46.9%
MW-17	4,500	54,000	1200	< 500	7,100
MW-17 FD03	4,100	50,000	1,100	< 500	6,400
RPD	9.30%	7.69%	8.70%	0%	10.4%
RS-01	< 1.0	< 1.0	< 1.0	< 1.0	1.0
RS-02	< 1.0	< 1.0	< 1.0	< 3.9	1.0
RS-03	< 1.0	< 1.0	< 1.0	< 2.3	1.0
TB-01	< 1.0	< 1.0	< 1.0	< 1	1.0
TB-02	< 1.0	< 1.0	< 1.0	< 1	1.0

1 - "<" indicates that the concentration of the analyte is less than the concentrations shown

2 - ND indicates that the data was not detected

2 - RPD = relative percent difference





Appendix B-5

Ecosystems-1st Semi-Annual
Groundwater Monitoring Report
(6-2010)



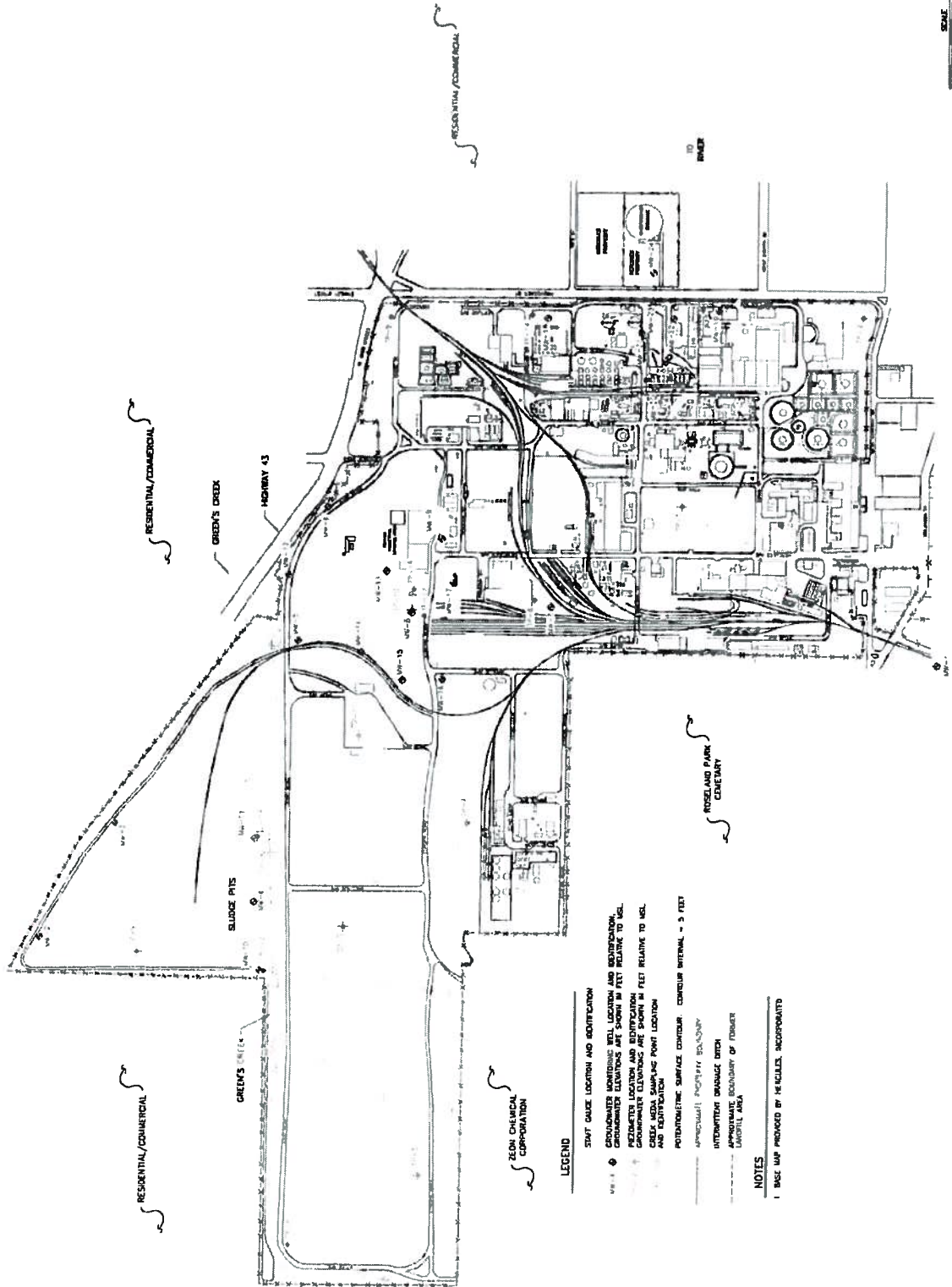
TABLE 2
SUMMARY OF VOC ANALYTICAL RESULTS
 May 2010
 Hercules Incorporated
 Hattiesburg, Mississippi

Location	Date	C-100										C-101										C-102										C-103										C-104										C-105										C-106										C-107										C-108										C-109										C-110										C-111										C-112										C-113										C-114										C-115										C-116										C-117										C-118										C-119										C-120																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	49.0	49.1	49.2	49.3	49.4	49.5	49.6	49.7	49.8	49.9	50.0	50.1	50.2	50.3	50.4	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.2	51.3	51.4	51.5	51.6	51.7	51.8	51.9	52.0	52.1	52.2	52.3	52.4	52.5	52.6	52.7	52.8	52.9	53.0	53.1	53.2	53.3	53.4	53.5	53.6	53.7	53.8	53.9	54.0	54.1	54.2	54.3	54.4	54.5	54.6	54.7	54.8	54.9	55.0	55.1	55.2	55.3	55.4	55.5	55.6	55.7	55.8	55.9	56.0	56.1	56.2	56.3	56.4	56.5	56.6	56.7	56.8	56.9	57.0	57.1	57.2	57.3	57.4	57.5	57.6	57.7	57.8	57.9	58.0	58.1	58.2	58.3	58.4	58.5	58.6	58.7	58.8	58.9	59.0	59.1	59.2	59.3	59.4	59.5	59.6	59.7	59.8	59.9	60.0	60.1	60.2	60.3	60.4	60.5	60.6	60.7	60.8	60.9	61.0	61.1	61.2	61.3	61.4	61.5	61.6	61.7	61.8	61.9	62.0	62.1	62.2	62.3	62.4	62.5	62.6	62.7	62.8	62.9	63.0	63.1	63.2	63.3	63.4	63.5	63.6	63.7	63.8	63.9	64.0	64.1	64.2	64.3	64.4	64.5	64.6	64.7	64.8	64.9	65.0	65.1	65.2	65.3	65.4	65.5	65.6	65.7	65.8	65.9	66.0	66.1	66.2	66.3	66.4	66.5	66.6	66.7	66.8	66.9	67.0	67.1	67.2	67.3	67.4	67.5	67.6	67.7	67.8	67.9	68.0	68.1	68.2	68.3	68.4	68.5	68.6	68.7	68.8	68.9	69.0	69.1	69.2	69.3	69.4	69.5	69.6	69.7	69.8	69.9	70.0	70.1	70.2	70.3	70.4	70.5	70.6	70.7	70.8	70.9	71.0	71.1	71.2	71.3	71.4	71.5	71.6	71.7	71.8	71.9	72.0	72.1	72.2	72.3	72.4	72.5	72.6	72.7	72.8	72.9	73.0	73.1	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.9	74.0	74.1	74.2	74.3	74.4	74.5	74.6	74.7	74.8	74.9	75.0	75.1	75.2	75.3	75.4	75.5	75.6	75.7	75.8	75.9	76.0	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1	80.2	80.3	80.4	80.5	80.6	80.7	80.8	80.9	81.0	81.1	81.2	81.3	81.4	81.5	81.6	81.7	81.8	81.9	82.0	82.1	82.2	82.3	82.4	82.5	82.6	82.7	82.8	82.9	83.0	83.1	83.2	83.3	83.4	83.5	83.6	83.7	83.8	83.9	84.0	84.1	84.2	84.3	84.4	84.5	84.6	84.7	84.8	84.9	85.0	85.1	85.2	85.3	85.4	85.5	85.6	85.7	85.8	85.9	86.0	86.1	86.2	86.3	86.4	86.5	86.6	86.7	86.8	86.9	87.0	87.1	87.2	87.3	87.4	87.5	87.6	87.7	87.8	87.9	88.0	88.1	88.2	88.3	88.4	88.5	88.6	88.7	88.8	88.9	89.0	89.1	89.2	89.3	89.4	89.5	89.6	89.7	89.8	89.9	90.0	90.1	90.2	90.3	90.4	90.5	90.6	90.7	90.8	90.9	91.0	91.1	91.2	91.3	91.4	91.5	91.6	91.7	91.8	91.9	92.0	92.1	92.2	92.3	92.4	92.5	92.6	92.7	92.8	92.9	93.0	93.1	93.2	93.3	93.4	93.5	93.6	93.7	93.8	93.9	94.0	94.1	94.2	94.3	94.4	94.5	94.6	94.7	94.8	94.9	95.0	95.1	95.2	95.3	95.4	95.5	95.6	95.7	95.8	95.9	96.0	96.1	96.2	96.3	96.4	96.5	96.6	96.7	96.8	96.9	97.0	97.1	97.2	97.3	97.4	97.5	97.6	97.7	97.8	97.9	98.0	98.1	98.2	98.3	98.4	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0	100.1	100.2	100.3	100.4	100.5	100.6	100.7	100.8	100.9	101.0	101.1	101.2	101.3	101.4	101.5	101.6	101.7	101.8	101.9	102.0	102.1	102.2	102.3	102.4	102.5	102.6	102.7	102.8	102.9	103.0	103.1	103.2	103.3	103.4	103.5	103.6	103.7	103.8	103.9	104.0	104.1	104.2	104.3	104.4	104.5	104.6	104.7	104.8	104.9	105.0	105.1	105.2	105.3	105.4	105.5	105.6	105.7	105.8	105.9	106.0	106.1	106.2	106.3	106.4	106.5	106.6	106.7	106.8	106.9	107.0	107.1	107.2	107.3	107.4	107.5	107.6	107.7	107.8	107.9	108.0	108.1	108.2	108.3	108.4	108.5	108.6	108.7	108.8	108.9	109.0	109.1	109.2	109.3	109.4	109.5	109.6	109.7	109.8	109.9	110.0	110.1	110.2	110.3	110.4	110.5	110.6	110.7	110.8	110.9	111.0	111.1	111.2	111.3	111.4	111.5	111.6	111.7	111.8	111.9	112.0	112.1	112.2	112.3	112.4	112.5	112.6	112.7	112.8	112.9	113.0	113.1	113.2	113.3	113.4	113.5	113.6	113.7	113.8	113.9	114.0	114.1	114.2	114.3	114.4	114.5	114.6	114.7	114.8	114.9	115.0	115.1	115.2	115.3	115.4	115.5	115.6	115.7	115.8	115.9	116.0	116.1	116.2	116.3	116.4	116.5	116.6	116.7	116.8	116.9	117.0	117.1	117.2	117.3	117.4	117.5	117.6	117.7	117.8	117.9	118.0	118.1	118.2	118.3	118.4	118.5	118.6	118.7	118.8	118.9	119.0	119.1	119.2	119.3	119.4	119.5	119.6	119.7	119.8	119.9	120.0	120.1	120.2	120.3	120.4	120.5	120.6	120.7	120.8	120.9	121.0	121.1	121.2	121.3	121.4	121.5	121.6	121.7	121.8	121.9	122.0	122.1	122.2	122.3	122.4	122.5	122.6	122.7	122.8	122.9	123.0	123.1	123.2	123.3	123.4	123.5	123.6	123.7	123.8	123.9	124.0	124.1	124.2	124.3	124.4	124.5	124.6	124.7	124.8	124.9	125.0	125.1	125.2	125.3	125.4	125.5	125.6	125.7	125.8	125.9	126.0	126.1	126.2	126.3	126.4	126.5	126.6	126.7	126.8	126.9	127.0	127.1	127.2	127.3	127.4	127.5	127.6	127.7	127.8	127.9	128.0	128.1	128.2	128.3	128.4	128.5	128.6	128.7	128.8	128.9	129.0	129.1	129.2	129.3	129.4	129.5	129.6	129.7	129.8	129.9	130.0	130.1	130.2	130.3	130.4	130.5	130.6	130.7

TABLE 3
SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS

Location	Concentration in µg/L									
	Benzene	Carbon Tetrachlorid ^e	Chlorobenzene	Toluene	Chloroform	1,1-Dichloroethen ^e	Ethylbenzene			
MW-5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
MW-5 FD01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
RPD	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
MW-19	52	3.2	10	3.0	10	1.4	1.9			
MW-19 FD02	53	3.4	11	3.1	3.6	1.2	1.9			
RPD	1.9	0.6	9.5	3.3	94.1	15.4	0.0			
RS-01	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0			
RS-02	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
RS-03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
TB-01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
TB-02	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			

Notes: "<" indicates that the concentration of the analyte is less than the concentration shown
 RPD = relative percent
 µg/L = micrograms per liter



LEGEND

- STAFF GAUGE LOCATION AND IDENTIFICATION
- GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION
- GROUNDWATER ELEVATIONS ARE SHOWN IN FEET RELATIVE TO MSL
- PERIMETER LOCATION AND IDENTIFICATION
- PERIMETER ELEVATIONS ARE SHOWN IN FEET RELATIVE TO MSL
- CONCRETE PAVING POINT LOCATION AND IDENTIFICATION
- POTENTIAL SURFACE CONTOUR CONTOUR INTERVAL = 5 FEET
- APPROXIMATE PROPERTY BOUNDARY
- INTERMITTENT DRAINAGE DITCH
- APPROXIMATE BOUNDARY OF FUTURE LAYOULL AREA

NOTES

- 1 BASE MAP PROVIDED BY HERCULES, INCORPORATED

NO.	DATE	REVISION
1	12/15/03	ISSUED FOR PERMITS
2	01/14/04	REVISED PER COMMENTS
3	02/02/04	REVISED PER COMMENTS
4	02/10/04	REVISED PER COMMENTS
5	02/17/04	REVISED PER COMMENTS
6	02/24/04	REVISED PER COMMENTS
7	03/02/04	REVISED PER COMMENTS
8	03/09/04	REVISED PER COMMENTS
9	03/16/04	REVISED PER COMMENTS
10	03/23/04	REVISED PER COMMENTS
11	03/30/04	REVISED PER COMMENTS
12	04/06/04	REVISED PER COMMENTS
13	04/13/04	REVISED PER COMMENTS
14	04/20/04	REVISED PER COMMENTS
15	04/27/04	REVISED PER COMMENTS
16	05/04/04	REVISED PER COMMENTS
17	05/11/04	REVISED PER COMMENTS
18	05/18/04	REVISED PER COMMENTS
19	05/25/04	REVISED PER COMMENTS
20	06/01/04	REVISED PER COMMENTS
21	06/08/04	REVISED PER COMMENTS
22	06/15/04	REVISED PER COMMENTS
23	06/22/04	REVISED PER COMMENTS
24	06/29/04	REVISED PER COMMENTS
25	07/06/04	REVISED PER COMMENTS
26	07/13/04	REVISED PER COMMENTS
27	07/20/04	REVISED PER COMMENTS
28	07/27/04	REVISED PER COMMENTS
29	08/03/04	REVISED PER COMMENTS
30	08/10/04	REVISED PER COMMENTS
31	08/17/04	REVISED PER COMMENTS
32	08/24/04	REVISED PER COMMENTS
33	08/31/04	REVISED PER COMMENTS
34	09/07/04	REVISED PER COMMENTS
35	09/14/04	REVISED PER COMMENTS
36	09/21/04	REVISED PER COMMENTS
37	09/28/04	REVISED PER COMMENTS
38	10/05/04	REVISED PER COMMENTS
39	10/12/04	REVISED PER COMMENTS
40	10/19/04	REVISED PER COMMENTS
41	10/26/04	REVISED PER COMMENTS
42	11/02/04	REVISED PER COMMENTS
43	11/09/04	REVISED PER COMMENTS
44	11/16/04	REVISED PER COMMENTS
45	11/23/04	REVISED PER COMMENTS
46	11/30/04	REVISED PER COMMENTS
47	12/07/04	REVISED PER COMMENTS
48	12/14/04	REVISED PER COMMENTS
49	12/21/04	REVISED PER COMMENTS
50	12/28/04	REVISED PER COMMENTS

HERCULES

Eco-Systems, Inc.
Groundwater Remediation Systems
Jackson, MS • Atlanta, GA • Houston, TX
Memphis, TN • Phoenix, AZ • San Diego, CA
Wilmington, NC • Columbia, SC

PROJECT NO. 03-000000
DATE PLOTTED 03/15/04
SCALE 1" = 50'
SITE MAP
2 0





Appendix B-6

2011 Hercules Groundwater Report
(2SA10)



TABLE 3
SUMMARY OF ANALYTICAL RESULTS
December 2010
Hercules Incorporated

Sample Location	Sample Date	PARAMETER			
		Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Total Dioxathion
CM-00	11/29/2010	ND	ND	ND	ND
CM-01	11/29/2010	ND	ND	ND	ND
CM-02	11/29/2010	ND	ND	ND	ND
CM-03	11/29/2010	0.49	ND	ND	ND
CM-04	11/29/2010	1.5	ND	0.62	0.62
CM-05	11/29/2010	1.9	ND	ND	ND
MW-02	11/30/2010	ND	ND	ND	ND
MW-03	11/30/2010	ND	ND	ND	ND
MW-04*	12/1/2010	22.2	ND	ND	ND
MW-05	12/1/2010	ND	0.74	0.56	1.30
MW-06	12/1/2010	ND	ND	ND	ND
MW-07	12/1/2010	ND	ND	ND	ND
MW-08*	12/2/2010	310	4.3	50.1	54.4
MW-09	12/2/2010	ND	6.6	1.20	7.8
MW-10	12/1/2010	ND	ND	ND	ND
MW-11	12/1/2010	1.00	ND	ND	ND
MW-12	12/1/2010	0.75	ND	ND	ND
MW-13*	12/2/2010	6.6	1.50	0.60	2.1
MW-14*	12/2/2010	ND	5.10	1.00	6.1
MW-15*	12/2/2010	ND	2.90	2.80	5.7
MW-16*	12/2/2010	ND	1.60	ND	1.6
MW-17*	12/3/2010	3045	23.7	4.20	27.9
MW-18	12/3/2010	ND	2.60	5.60	8.2
MW-19	12/2/2010	ND	79.6	5.10	84.7
MW-20	12/3/2010	3.40	0.58	6.10	6.68
MW-21	12/3/2010	10.2	ND	ND	ND
MW-22	12/3/2010	6.20	ND	ND	ND
MW-23	12/3/2010	ND	ND	ND	ND
MW-24	12/1/2010	0.46	ND	ND	ND
MDEQ TRG		NA	NA	NA	54.8

Note: All concentrations reported in micrograms per liter (ug/L)

** Denotes wells targeted by MDEQ for yearly sampling*

Analysis conducted per Modified SW846

ND - non detect

Red denotes total dioxathion concentration exceeds MDEQ TRG

MDEQ TRG - Mississippi Department of Environmental Quality-Target Remedial Goal

TABLE 4

SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS

Location	Concentrations in µg/L				
	Benzene	Carbon Tetrachloride	Chlorobenzene	Toluene	Chloroform
MW-04	< 1.0	< 1.0	< 1.0	< 1	< 1.0
MW-04 FD01	< 1.0	< 1.0	< 1.0	< 1	< 1.0
RPD	0%	0%	0%	0%	0%
MW-13	530	970	25	< 10	230
MW-13 FD02	530	970	28	< 10	260
RPD	0%	0%	11.3%	0%	12.2%
MW-18	< 1.0	< 1.0	18	< 1	< 1.0
MW-18 FD03	< 1.0	< 1.0	20	< 1	< 1.0
RPD	0%	0%	10.5%	0%	0%
RS-01	< 1.0	< 1.0	< 1.0	1.9	71
RS-02	< 1.0	< 1.0	< 1.0	1.7	68
RS-03	< 1.0	< 1.0	< 1.0	1.8	75
RS-04	< 1.0	< 1.0	< 1.0	1.5	61
TB-01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TB-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TB-03	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

1 - "<" indicates that the concentration of the analyte is less than the concentrations shown.

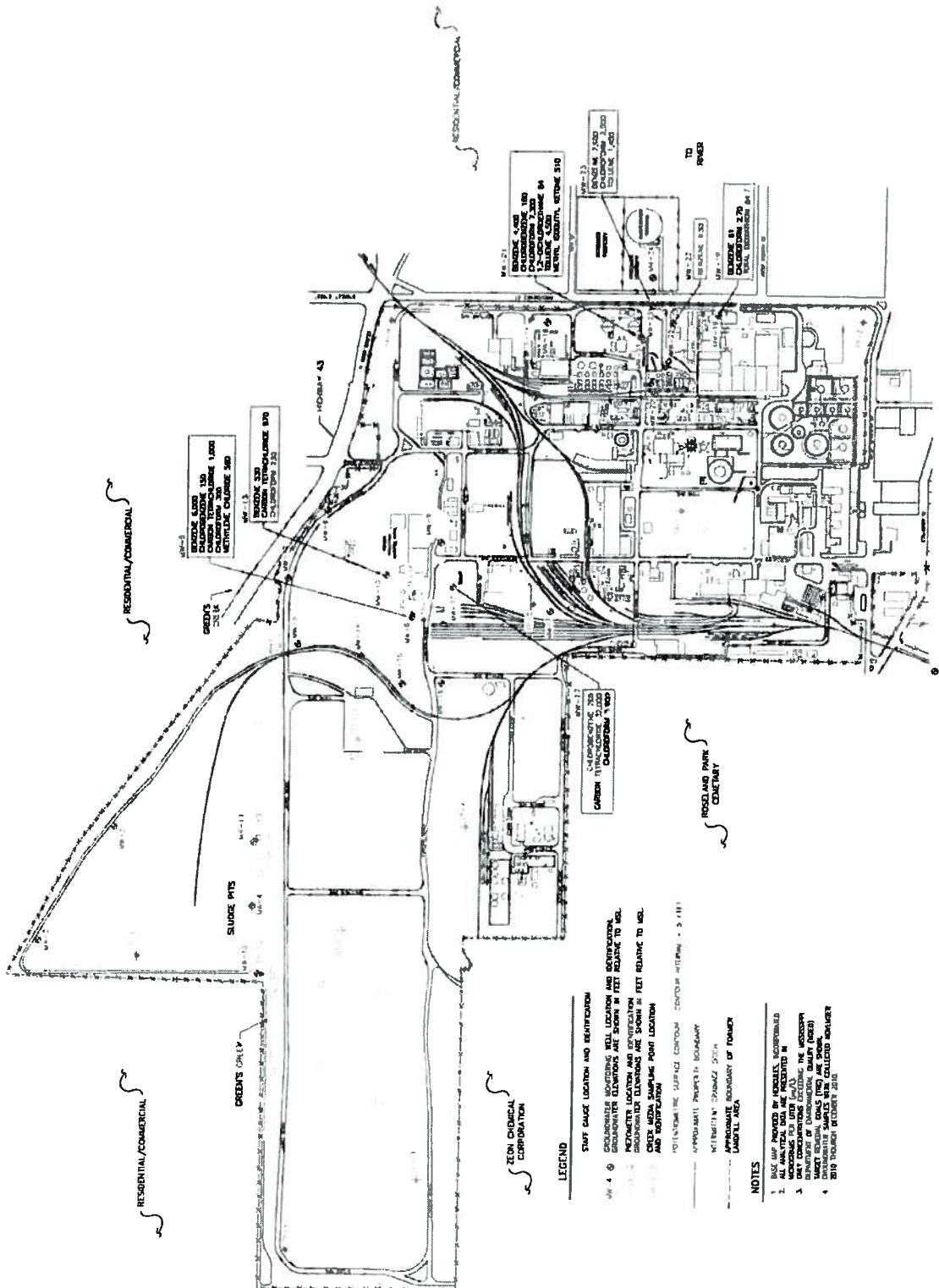
2 - RPD = relative percent difference.

TABLE 4 (CONTINUED)
SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS

Location	Concentrations in $\mu\text{g}/\text{l}$.		
	Dioxenethion	<i>cis</i> -Dioxathion	<i>trans</i> -Dioxathion
MW-4	22.2	< 0.400	< 0.400
MW-4 FD01	15.5	< 0.400	< 0.400
RPD	35.5%	0.000%	0.000%
MW-13	6.6	1.5	0.60
MW-13 FD02	6.3	< 0.400	< 0.400
RPD	4.65%	95.0%	40.0%
MW-18	< 0.400	2.6	5.6
MW-18 FD03	1.9	< 0.400	6.4
RPD	130%	147%	13.3%
RS01	0.55	< 0.400	< 0.400
RS02	< 0.400	< 0.400	< 0.400
RS03	1.3	< 0.400	0.89
RS04	2.9	< 0.400	< 0.400

1- "<" indicates that the concentration of the analyte is less than the concentration shown

2- RPD = relative percent difference



LEGEND

STAFF GAUGE LOCATION AND IDENTIFICATION

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

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