

US EPA ARCHIVE DOCUMENT

**FIRST SEMIANNUAL 2006 INTERIM MEASURES
GROUNDWATER MONITORING REPORT
CHEVRON CINCINNATI FACILITY
HOOVEN, OHIO**

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SUBMITTED BY: Trihydro Corporation

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1.0 INTRODUCTION

Chevron Products Company, now known as Chevron U.S.A. Inc., owns a former fuels and asphalt petroleum refinery outside the unincorporated town of Hooven, located within Whitewater Township, Ohio. The location of the Chevron Cincinnati Facility (Facility) is presented on Figure 1. In 1985, Chevron assumed operation of the refinery upon acquisition of Gulf Oil Corporation. In 1986, refining operations were terminated by Chevron. Environmental restoration and dismantling operations have been ongoing since 1986.

1.1 HISTORY OF IMPACTS

On January 21, 1985, a sheen of light non-aqueous phase liquid (LNAPL) was observed seeping into the Great Miami River near the south boundary of the Facility (in the vicinity of Production Well No. 15). Following the discovery of the release, refinery personnel notified the United States (U.S.) Coast Guard, the National Response Center, and the Ohio Environmental Protection Agency (EPA). In addition to reporting the release, refinery personnel immediately deployed an oil boom in the Great Miami River to contain the release.

On February 11, 1985 the Dravo Sand and Gravel Company, located to the south of the Facility, re-started the water production well located on their property, at the request of Gulf Oil Company, and seepage of LNAPL into the Great Miami River ceased. Two hydrocarbon recovery systems were subsequently installed in 1985 (by the Gulf Oil Company) one at the Facility and a second at the property owned by the Dravo Sand and Gravel Company. Analyses of LNAPL samples collected from the recovery systems indicated a composition of approximately 80% leaded gasoline and 20% diesel fuel. Approximately 3,000,000 gallons of LNAPL had been recovered by December 1990. Approximately 400,000 gallons of liquid hydrocarbon were recovered between December 1990 and December 1994. Approximately 400,000 additional gallons have been recovered from December 1994 to present. Recovery systems continue to operate at the former refinery as part of interim measures.

The Facility has been subject to a number of investigations since 1982. Based on early assessment activities conducted at the former refinery it was determined that:

- During the active operation of the refinery prior to 1980, some of the various wastes generated by refining operations were disposed of in several Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) identified at the refinery, including tanks and impoundments. The typical wastes generated at the refinery included various heavy (high molecular weight) oily sludges, spent caustic, and leaded tank bottoms. Some of these refinery

wastes contained residual volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals such as lead, cadmium, chromium, and nickel. Other wastes such as spent caustic were considered to be hazardous as a result of elevated pH. Chevron is currently excavating and transporting these wastes to an offsite RCRA Subtitle C hazardous waste landfill.

- Accidental spills and possibly pipe or tank leakage prior to the refinery shutdown in 1986 released both organic and inorganic constituents to soil and groundwater beneath the Facility. The specific sources of the product releases are not known. Interim measures addressing the investigation, monitoring, and remediation of LNAPL have been on-going since the discovery of the LNAPL impacts.

In May 1993, Chevron entered into the Administrative Order on Consent (Consent Order) for the Facility with the U.S. EPA. The Consent Order stipulated completion of a RCRA Facility Investigation (RFI), and Corrective Measures Study. Since execution of the Consent Order in 1993, Chevron has implemented numerous interim measures to address impacts to soil and groundwater beneath the Facility including installation/augmentation of a groundwater monitoring system, hydraulic control system, LNAPL recovery system, and vapor extraction systems. In addition, groundwater monitoring has been performed since 1989 under the interim measures program.

1.2 MODIFICATIONS TO THE INTERIM MEASURES GROUNDWATER MONITORING PROGRAM

Groundwater monitoring was performed quarterly between 1989 and 1998. Chevron received approval to modify the interim measures groundwater monitoring program in correspondence from the U.S. EPA dated April 2, 1998. The modifications included:

- Elimination of the annual requirement for analysis of groundwater samples for VOCs using U.S. EPA Method 8204B
- Reduction in frequency of groundwater monitoring in wells screened in the shallow and deep portions of the unconfined aquifer from quarterly to semiannually. Sampling events were scheduled to be conducted in March-April and October-November each year
- Reduction in frequency of groundwater monitoring in wells screened in the intermediate portions of the unconfined aquifer from quarterly to annually, to be conducted during the October-November sampling event

- If a monitoring well screened in the shallow portions of the unconfined aquifer contained LNAPL during a sampling event, then the intermediate well in the well cluster was stipulated to be sampled (wells containing LNAPL are not sampled)

Monitoring wells located in the unincorporated town of Hooven, Ohio and in the Southwest Quadrant area were not incorporated into the interim measures groundwater monitoring program in April 1998 and continued to be sampled on a quarterly basis. Subsequently, in several correspondences between Chevron and the U.S. EPA, modifications were proposed to the Hooven and Southwest Quadrant area monitoring network. The approved modifications included:

- Inclusion of monitoring Well MW-94S in the monitoring network
- Inclusion of monitoring wells MW-82D, MW-94D, and MW-97D during the quarterly monitoring events conducted between the second quarter 1999 and the second quarter 2001

Subsequently in early 2000, monitoring wells MW-82D and MW-97D were abandoned (as these wells did not contain appreciable amounts of groundwater following installation in 1999.) Chevron provided the U.S. EPA with notice regarding the well abandonment activities in correspondence dated March 24, 2000.

In correspondence dated May 5, 2000, Chevron notified the U.S. EPA that newly installed monitoring wells MW-113 through MW-118 installed in Hooven and the Southwest Quadrant would be sampled in May 2000. Chevron proposed that following review of the analytical results, a determination would be made to incorporate these wells into the interim groundwater monitoring network. Monitoring wells MW-113, MW-114, MW-115S, MW-115D, and MW-118 were subsequently incorporated into the groundwater monitoring network.

In correspondence dated March 26, 2001, Chevron requested a reduction in the frequency of groundwater monitoring in the Hooven and Southwest Quadrant monitoring wells to coincide with previous reductions to the facility wells included in the interim measures monitoring program. Wells to be included in the interim measures groundwater monitoring program at that time included:

- Hooven area monitoring wells MW-28S, MW-35, MW-37, MW-81S, MW-94S, MW-95D, MW-101, MW-113, MW-114, MW-115S, MW-115D, and MW-118 (Note: at the request of the U.S. EPA, facility monitoring Well MW-28S was included in the Hooven monitoring network to replace recently abandoned Well K-1)
- Facility wells MW-23, MW-27, L-4R, MW-48S, MW-48I, MW-48D, MW-61, MW-85S, and MW-85D

- Cleves Well Field early warning monitoring wells MW-47S, MW-47I, MW-47D, MW-59S, MW-59D, MW-60S, and MW-60D
- Island monitoring wells MW-65S, MW-65I, MW-65D, MW-67, MW-74S, MW-74I, and MW-74D

The monitoring well network was modified at the request of the U.S. EPA to include a new groundwater monitoring well installed on the north side of U.S. Route 50, between groundwater monitoring Well MW-35 and the former location of groundwater monitoring Well K-1. This monitoring well was installed in 2001 and designated MW-120. Groundwater monitoring Well MW-120 replaced facility monitoring Well MW-28S in the interim monitoring well network beginning in April 2002.

In correspondence dated September 16, 2003, Chevron notified the U.S. EPA that monitoring Well MW-118 had been destroyed as a result of construction activities. Chevron advised the U.S. EPA that this monitoring well would not be replaced due to upcoming changes to the interim measures groundwater monitoring program as outlined in the Draft Conceptual Groundwater Remedy, submitted to the U.S. EPA in July 2003.

In the same correspondence, Chevron clarified the elimination of monitoring wells MW-93S, MW-93D, MW-94D, MW-117S, and MW-117D from the well network. The U.S. EPA had previously approved these modifications to the well network during a teleconference conducted on April 9, 2001 and documented in correspondence submitted to the U.S. EPA by Chevron on May 9, 2001. However, several of these monitoring wells were sampled in 2002 and during the first monitoring event conducted in 2003 to support preparation of the Draft Conceptual Groundwater Remedy Report. Since this report has been completed, semiannual groundwater sample collection from these referenced wells has been discontinued.

In correspondence dated October 1, 2003, Chevron outlined the agreement with the U.S. EPA to terminate natural attenuation monitoring and to reduce the island monitoring network. The modification included:

- Termination of the natural attenuation monitoring program in the island area wells
- Elimination of monitoring wells MW-47S, MW-47I, MW-47D, MW-59S, MW-59D, MW-60S, MW-60D, MW-74I and MW-74D from the Cleves well field and island monitoring network.

The monitor well network was modified to include 10 new groundwater monitoring wells installed in the Hooven and Southwest Quadrant as per the Hooven Vapor Sampling Workplan dated March 3, 2005. Monitor wells MW-121, MW-122, and MW-124 through MW-130 were installed in order to more fully delineate the lateral extent of LNAPL and dissolved phase impacts beneath Hooven and to assist with correlation of potential indoor air contaminants and the refinery plume. These wells became part of the interim measures groundwater monitoring well network as they were completed between May and July of 2005.

1.3 ADMINISTRATIVE ORDER ON CONSENT

On November 1, 2006, before the generation of this report, Chevron and the U.S. EPA agreed on an Administrative Order on Consent (2006 Order). The 2006 Order details the implementation of the environmental restoration that Chevron will complete at the site. The Remedial Implementation Plan and the Operations, Monitoring, and Maintenance Plan, as required by the 2006 Order, will define future sampling schedules and procedures, that may be different than what is completed under the current interim measures. However, the 2006 monitoring events will still be completed in accordance with the existing interim measure monitoring procedures.

2.0 GROUNDWATER MONITORING PROCEDURES

Groundwater monitoring is conducted in accordance with the procedures outlined in the Interim Measures Mini-Quality Assurance Project Plan (Mini-QAPP), Revision 2, dated September 1996. Specific activities performed in accordance with the Mini-QAPP include:

- Bi-monthly measurement of static fluid levels
- Collection of groundwater samples
- Validation of laboratory analytical results
- Reporting of groundwater monitoring results

Fluid levels were gauged in selected monitoring wells in January, March, and May 2006. Fluid levels were also measured in the 26 monitoring wells sampled during the first 2006 semiannual groundwater monitoring event conducted between March 23 and April 28, 2006. A total of 28 wells were sampled during this event. Production well PROD_15 was sampled during the first 2006 semiannual groundwater monitoring event. MW-37 and MW-114 were not sampled because access to these wells had not been granted by the new landowner at the time of sampling. Access to MW-37 and MW-114 has now been secured and the wells will be sampled beginning with the November 2006 event. A complete listing of wells sampled as part the second semiannual groundwater monitoring event is as follows:

- Facility groundwater monitoring wells L-4R, MW-7, MW-23, MW-27, MW-33, MW-48S, MW-48D, MW-85S, MW-85D, MW-104S, and TMW-4I
- Facility production well PROD_15
- Hooven/Southwest Quadrant area monitoring wells MW-35, MW-81S, MW-81D, MW-94S, MW-95S, MW-95D, MW-99S, MW-100, MW-101, MW-113, MW-115S, MW-115D, MW-120, and MW-128
- Gulf Park groundwater monitoring wells TH-1 and TH-2

Figure 2 presents the site layout map for the Facility including the monitoring wells sampled between March and April 2006. The Gulf Park wells are not presented due to their distance from the facility and scale limitations for the report figures.

2.1 FLUID LEVEL MONITORING PROCEDURES

Upon arriving at a well location, sampling personnel checked the well for damage and removed the lock and well cap. Any damage to the wellhead or casing, or any items requiring maintenance were noted in the field sampling record and reported to the field task leader so that the necessary repairs could be scheduled. Field personnel donned new, sterile gloves prior to gauging fluid levels at each well.

Fluid levels within each of the monitoring wells were measured within a 24-hour period. Fluid level measurements were performed using a Solonist® interface probe accurate to 0.01-feet. The measurements were made from the pre-marked (surveyed) measuring point on the north side of the well casing. Manufacturer's instructions were followed to ensure proper care of the fluid level probe. The fluid level measurements were recorded in the field logbooks. The exposed portion of the tape and the probe were decontaminated before performing measurements at each monitoring well.

2.2 GROUNDWATER SAMPLING PROCEDURES

Groundwater samples were collected and analyzed from the monitoring wells during the March/April 2006 groundwater monitoring event following low-flow sampling protocols. The monitoring wells were evacuated using dedicated tubing with a portable submersible pump and a variable speed controller. Wells were purged in the order of least impacted to most impacted to prevent cross contamination.

The pumps were installed so that the pump intake height was located in the middle or slightly above the middle of the saturated portion of the screened interval. The flow rate was maintained between 0.1 and 0.5 liters per minute to minimize drawdown and to avoid undue pressure, temperature, or other physical disturbances to groundwater over the sampling interval. Dedicated polyethylene tubing was used to evacuate each well. Prior to purging each well, the submersible pump, for wells sampled with non-dedicated pumps, was decontaminated in the following manner:

- External surfaces were brushed free of loose material, washed with a phosphate free decontamination solution and potable water, and rinsed with deionized or distilled water
- Internal surfaces were cleaned by placing the pump in a clean bucket containing a phosphate-free decontamination solution and allowing the pump to operate for several minutes to circulate the decontamination solution through the impellers and pump housing. The pump was then cycled through a second decontamination solution, rinsed by circulating with potable water, followed by a distilled water rinse

Decontamination fluids and purge water were collected and disposed of into the facility wastewater treatment system.

2.2.1 FIELD ANALYSES

Field parameters, including specific conductivity, pH, temperature, dissolved oxygen, oxygen reduction potential, and turbidity were measured over successive time intervals using an In-Situ Troll 9000 or Horiba U-22XD multi-parameter meter during well evacuation to ensure a representative groundwater sample was collected from each well. The multi-parameter water quality meters were calibrated daily, in accordance with the manufacturer's guidelines, using a factory-prepared calibration standard. In general, the following stabilization criteria were achieved over three successive readings before collecting groundwater samples:

- pH \pm 0.5
- Specific conductivity \pm 5%
- Turbidity \leq 5 NTUs or \pm 10%

Field parameters for each monitoring well were recorded on the field forms included as Appendix A. Physical characteristics of the groundwater were also noted and recorded during sampling (i.e. sediment, color, odor, sheen, etc.).

2.2.2 SAMPLE COLLECTION AND ANALYSES

Groundwater samples were collected from wells using dedicated polyethylene discharge tubing attached to the submersible pump. Field personnel donned new nitrile gloves prior to sampling each well to prevent cross contamination of samples and equipment. Samples were collected from wells in the order of least impacted to most impacted to prevent cross contamination. Sample agitation was minimized during sampling.

Sample bottles were preserved in the laboratory before being sent to the site. The samples were collected and analyzed in general accordance with the Test Methods for Evaluating Solid Waste (U.S. EPA 1997). All groundwater samples collected during this event were submitted for analysis of VOCs via U.S. EPA Method 8260, and dissolved lead using U.S. EPA Method 6010B. A limited number of wells (see Table 2b) had groundwater samples collected and submitted for analysis of SVOCs via U.S. EPA Method 8270. Groundwater samples to be analyzed for VOCs were carefully filled during sample collection to minimize headspace while eliminating air bubbles from the sample.

The lids on each sample container were tightly secured and the sample labels filled out completely including sample identification, date and time of collection, project name, client name, field personnel initials, requested analyses, and preservation methods. The sample containers were placed on ice in an opaque cooler with proper custody maintained.

One equipment blank (EB-1 050206) was prepared by circulating water through the pump following decontamination, then transferring the sample to the appropriate containers. Blind duplicate samples were collected from monitoring wells TH-1, MW-81S, and MW-104S. Matrix spike/matrix spike duplicate (MS/MSD) samples were collected from monitoring wells MW-115S and PROD_15.

The groundwater samples collected from March to April 2006 were shipped under chain-of-custody procedures to Lancaster Laboratories in Lancaster, Pennsylvania. Glass containers were wrapped in bubble wrap and void spaces in the cooler were filled in order to protect against breakage during transport to the laboratory. Trip blanks and temperature blanks prepared by the laboratory were shipped with each sample cooler. Trip blanks were also analyzed for volatile organic constituents. A chain-of-custody form accompanied each cooler of samples to the laboratory.

3.0 SUMMARY OF FINDINGS

This semiannual report presents the results of interim measures groundwater monitoring conducted between March and April 2006. Fluid level gauging was conducted on January 20, March 17, and May 26, 2006. Groundwater sampling was conducted between March 23 and April 28, 2006 for the first semiannual groundwater monitoring event. The field sampling forms are included within Appendix A.

3.1 FLUID LEVEL MONITORING RESULTS

Fluid level measurements are summarized in Table 1 and include fluid level measurements recorded from January 20, March 17, and May 26, 2006. A potentiometric surface map was constructed using the May 26 fluid level data (Figure 3). Groundwater elevation was recorded between 487.98 feet above mean sea level (ft-amsl) measured in monitoring well MW-41 and 457.88 ft-amsl measured in production well PROD_15 for the on-site and near-site wells.

Groundwater flow is generally towards the south beneath the Facility. Contour lines are oriented perpendicular to the axis of the valley with minor, if any, redirection at the river. Pumping wells, characterized by “cones of depression” in the potentiometric surface, locally steepen and/or reverse hydraulic gradients near the production wells and alter prevailing hydraulic gradients “inward” beneath the site. Production well PROD_15 was actively pumping at the time of gauging and the cone of depression can be observed in Figure 3.

During the May 26, 2006 fluid level gauging event, LNAPL was measured in monitoring wells MW-19, MW-40, MW-58S, MW-86, and MW-88. Figure 4 presents a summary of maximum LNAPL thicknesses measured in these wells for the month of May.

3.2 GROUNDWATER ANALYTICAL RESULTS

Analytical results for the March-April 2006 semiannual groundwater monitoring event are summarized in Table 2a (Volatile Organic Constituents), Table 2b (Semi-Volatile Organic Constituents), and Table 2c (Dissolved Lead). The groundwater laboratory analytical reports for the first semiannual monitoring event are included in Appendix B. Figure 5 and Figure 6 present the groundwater analytical results for volatile and semi-volatile constituents for the first semiannual 2006 groundwater monitoring event. Figure 7 depicts the benzene concentration map for Hooven and the Southwest Quadrant for the March-April 2006 groundwater monitoring event. The results of the laboratory analysis of groundwater samples submitted in March and April are summarized as follows.

- Benzene, toluene, ethylbenzene and/or total xylenes were detected in groundwater samples collected from monitoring wells MW-7, MW-48S, MW-81S, MW-81D, MW-85S, MW-99S, MW-128, TH-1, TH-2, and from production well PROD_15
- SVOCs were detected in groundwater samples collected from monitoring wells MW-7, MW-48S, MW-81S, MW-85S, and MW-128
- Dissolved lead in groundwater samples was not detected above the detection limit in any of the wells during this event

3.3 QUALITY ASSURANCE/QUALITY CONTROL

A 100% data validation review was performed for the groundwater analytical results for the samples collected in March and April of 2006. A determination of acceptability was completed for precision, accuracy, method compliance, and completeness per criteria established in the U.S. EPA Region 1 Data Validation Functional Guidelines for Evaluating Environmental Analyses (U.S. EPA 1996). Copies of the data validation reports are provided in Appendix C.

Precision is the measure of variability of sample measurements. Field precision is determined by a comparison of field duplicate sample results. Laboratory precision is determined by examining the laboratory duplicate results. Evaluation of both the field and laboratory duplicates for precision was accomplished using the relative percent difference (RPD). The RPD is defined as the difference between the primary and duplicate samples divided by the mean and expressed as a percentage. Field duplicate RPD limits are set at 0-30% and laboratory RPD limits reference published or laboratory control charted limits. RPD values between the primary and field duplicate samples, MS/MSD samples, and laboratory control samples/laboratory control sample duplicates (LCS/LCSD) were determined acceptable for each of the analyses.

Accuracy is a measure of sampling and analysis bias. Field accuracy was evaluated by collecting trip, and equipment blanks to monitor for possible ambient or cross contamination during sampling. Laboratory accuracy is measured by evaluating LCS and MS/MSD recoveries. Laboratory and field accuracy were determined to be acceptable for the first semiannual event.

Method compliance was determined by reviewing the initial calibrations, initial and continuous calibration verifications, holding times, detection limits, surrogate recoveries, method blanks, MS/MSD, and LCS/LCSD against

method specific requirements. As detailed in Appendix C, each of the listed quality assurance/quality control criteria were determined acceptable per review of the laboratory quality assurance package and the raw analytical results.

Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain of custody and laboratory analytical methods. Completeness also includes a review of the analytical reports and laboratory quality assurance report. None of the constituents were qualified as rejected in any of the groundwater samples collected during the first semiannual 2006 monitoring event and completeness goals for this project have been met.

3.4 CONCLUSIONS

Results from the first semiannual 2006 event were compared to previous semiannual interim measure groundwater reports in an effort to determine general trends in the groundwater movement and overall impact. Based on these comparisons, these conclusions were made:

- No additional VOC, SVOC, and metals analytical results were observed in wells that had not historically been impacted during previous events.
- No additional wells from previous events were observed to be impacted by LNAPL.
- Seasonal groundwater flow has not significantly changed since the implementation of the interim measures program.

4.0 REFERENCES

United States Environmental Protection Agency, New England – Region I, Office of Environmental Measurement and Evaluation. 1996. Data Validation Functional Guidelines for Evaluating Environmental Analyses. Revised December 1996.

United States Environmental Protection Agency, Office of Solid Waste and Emergency Response. 1997. Test Methods for Evaluating Solid Waste. SW-846, Revision 3.

TABLES

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

Well	Date Measured	Measuring Point Elevation (ft-amsl)	Depth to LNAPL (ft-bmp)	Depth to Groundwater (ft-bmp)	Elevation of LNAPL (ft-amsl)	Uncorrected Water Table Elevation (ft-amsl)	LNAPL Thickness (ft)	Equivalent ¹ LNAPL Head (ft)	Corrected Water Table Elevation (ft-amsl)
MW-1R	1/20/06	501.81	ND	32.96	--	468.85	--	--	468.85
	3/17/06	501.81	ND	32.19	--	469.62	--	--	469.62
	5/26/06	501.81	ND	35.34	--	466.47	--	--	466.47
MW-4	1/20/06	500.85	ND	31.88	--	468.97	--	--	468.97
	3/17/06	500.85	ND	30.82	--	470.03	--	--	470.03
	5/26/06	500.85	ND	34.23	--	466.62	--	--	466.62
MW-5	1/20/06	499.32	ND	30.26	--	469.06	--	--	469.06
	3/17/06	499.32	ND	29.30	--	470.02	--	--	470.02
	5/26/06	499.32	ND	32.71	--	466.61	--	--	466.61
MW-6	1/20/06	500.13	ND	31.03	--	469.10	--	--	469.10
	3/17/06	500.13	ND	30.15	--	469.98	--	--	469.98
	5/26/06	500.13	ND	33.55	--	466.58	--	--	466.58
MW-7	3/17/06	485.41	ND	15.43	--	469.98	--	--	469.98
	5/26/06	485.43	ND	18.81	--	466.62	--	--	466.62
MW-8	1/20/06	501.62	ND	32.85	--	468.77	--	--	468.77
	3/17/06	501.62	ND	32.10	--	469.52	--	--	469.52
	5/26/06	501.62	ND	35.52	--	466.10	--	--	466.10
MW-9	1/20/06	506.10	ND	37.18	--	468.92	--	--	468.92
	3/17/06	506.10	ND	37.21	--	468.89	--	--	468.89
	5/26/06	506.58	ND	40.58	--	466.00	--	--	466.00
MW-10	1/20/06	506.90	ND	38.06	--	468.84	--	--	468.84
	3/17/06	506.90	ND	38.12	--	468.78	--	--	468.78
	5/26/06	506.90	ND	41.50	--	465.40	--	--	465.40
MW-11	1/20/06	505.22	ND	36.41	--	468.81	--	--	468.81
	3/17/06	505.22	ND	37.11	--	468.11	--	--	468.11
	5/26/06	505.22	ND	40.52	--	464.70	--	--	464.70
MW-12	1/20/06	505.14	ND	36.35	--	468.79	--	--	468.79
	3/17/06	505.14	ND	36.26	--	468.88	--	--	468.88
	5/26/06	505.14	ND	39.58	--	465.56	--	--	465.56
MW-14	1/20/06	491.20	ND	17.83	--	473.37	--	--	473.37
	3/17/06	491.20	ND	15.80	--	475.40	--	--	475.40
	5/26/06	491.20	ND	18.81	--	472.39	--	--	472.39
MW-16	1/20/06	480.71	ND	10.12	--	470.59	--	--	470.59
	3/17/06	480.71	ND	5.51	--	475.20	--	--	475.20
	5/26/06	483.04	ND	14.33	--	468.71	--	--	468.71
MW-17	1/20/06	492.96	ND	22.11	--	470.85	--	--	470.85
	3/17/06	492.96	ND	17.80	--	475.16	--	--	475.16
	5/26/06	492.96	ND	21.28	--	471.68	--	--	471.68

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

Well	Date Measured	Measuring Point Elevation (ft-amsl)	Depth to LNAPL (ft-bmp)	Depth to Groundwater (ft-bmp)	Elevation of LNAPL (ft-amsl)	Uncorrected Water Table Elevation (ft-amsl)	LNAPL Thickness (ft)	Equivalent ¹ LNAPL Head (ft)	Corrected Water Table Elevation (ft-amsl)
MW-18R	1/20/06	495.93	ND	26.28	--	469.65	--	--	469.65
	3/17/06	495.93	ND	22.20	--	473.73	--	--	473.73
	5/26/06	495.93	ND	26.38	--	469.55	--	--	469.55
MW-19	1/20/06	493.85	24.57	24.71	469.28	469.14	0.14	0.11	469.25
	3/17/06	493.85	ND	22.14	--	471.71	--	--	471.71
	5/26/06	495.77	27.77	27.78	468.00	467.99	0.01	0.01	468.00
MW-20S	1/20/06	501.70	ND	32.78	--	468.92	--	--	468.92
	3/17/06	501.70	ND	31.19	--	470.51	--	--	470.51
	5/26/06	501.70	ND	34.68	--	467.02	--	--	467.02
MW-21	1/20/06	496.90	ND	24.35	--	472.55	--	--	472.55
	3/17/06	496.90	ND	21.07	--	475.83	--	--	475.83
	5/26/06	496.90	ND	25.42	--	471.48	--	--	471.48
MW-22	1/20/06	496.21	ND	24.34	--	471.87	--	--	471.87
	3/17/06	496.21	ND	20.52	--	475.69	--	--	475.69
	5/26/06	497.47	ND	26.25	--	471.22	--	--	471.22
MW-23	1/20/06	493.56	ND	20.55	--	473.01	--	--	473.01
	3/17/06	493.56	ND	18.07	--	475.49	--	--	475.49
	5/26/06	493.56	ND	21.32	--	472.24	--	--	472.24
MW-24	1/20/06	500.20	ND	31.07	--	469.13	--	--	469.13
	3/17/06	500.20	ND	29.87	--	470.33	--	--	470.33
	5/26/06	499.92	ND	33.23	--	466.69	--	--	466.69
MW-26R	1/20/06	504.04	ND	35.37	--	468.67	--	--	468.67
	3/17/06	504.04	ND	34.77	--	469.27	--	--	469.27
	5/26/06	504.04	ND	38.38	--	465.66	--	--	465.66
MW-27	1/20/06	502.54	ND	33.91	--	468.63	--	--	468.63
	3/17/06	502.54	ND	33.13	--	469.41	--	--	469.41
	5/26/06	502.54	ND	36.75	--	465.79	--	--	465.79
MW-28S	1/20/06	501.50	ND	33.02	--	468.48	--	--	468.48
	3/17/06	501.50	ND	31.98	--	469.52	--	--	469.52
	5/26/06	501.50	ND	35.73	--	465.77	--	--	465.77
MW-33	1/20/06	494.75	ND	22.91	--	471.84	--	--	471.84
	3/17/06	494.75	ND	19.00	--	475.75	--	--	475.75
	5/26/06	494.75	ND	23.52	--	471.23	--	--	471.23
MW-35	1/20/06	500.86	ND	33.41	--	467.45	--	--	467.45
	3/17/06	500.86	ND	31.35	--	469.51	--	--	469.51
	5/26/06	500.86	ND	34.93	--	465.93	--	--	465.93
MW-38	1/20/06	497.43	ND	23.22	--	474.21	--	--	474.21
	3/17/06	497.43	ND	19.30	--	478.13	--	--	478.13

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

Well	Date Measured	Measuring Point Elevation (ft-amsl)	Depth to LNAPL (ft-bmp)	Depth to Groundwater (ft-bmp)	Elevation of LNAPL (ft-amsl)	Uncorrected Water Table Elevation (ft-amsl)	LNAPL Thickness (ft)	Equivalent ¹ LNAPL Head (ft)	Corrected Water Table Elevation (ft-amsl)
MW-38	5/26/06	499.98	ND	23.55	--	476.43	--	--	476.43
MW-40	1/20/06	493.60	23.89	23.91	469.71	469.69	0.02	0.02	469.71
	3/17/06	493.60	20.8	21.00	472.80	472.60	0.20	0.16	472.76
	5/26/06	493.60	24.12	24.13	469.48	469.47	0.01	0.01	469.48
MW-41	1/20/06	498.39	ND	8.01	--	490.38	--	--	490.38
	3/17/06	498.39	ND	4.26	--	494.13	--	--	494.13
	5/26/06	498.39	ND	10.41	--	487.98	--	--	487.98
MW-42S	1/20/06	486.20	ND	12.62	--	473.58	--	--	473.58
	3/17/06	486.20	ND	11.58	--	474.62	--	--	474.62
	5/26/06	486.20	ND	15.16	--	471.04	--	--	471.04
MW-44S	1/20/06	485.48	ND	15.22	--	470.26	--	--	470.26
	3/17/06	485.48	ND	13.99	--	471.49	--	--	471.49
	5/26/06	485.48	ND	17.56	--	467.92	--	--	467.92
MW-45	1/20/06	483.32	ND	13.49	--	469.83	--	--	469.83
	3/17/06	483.32	ND	13.37	--	469.95	--	--	469.95
	5/26/06	483.32	ND	15.59	--	467.73	--	--	467.73
MW-47S	1/20/06	479.04	ND	9.46	--	469.58	--	--	469.58
MW-48S	1/20/06	481.32	ND	12.41	--	468.91	--	--	468.91
	3/17/06	481.32	ND	12.59	--	468.73	--	--	468.73
	5/26/06	481.32	ND	15.39	--	465.93	--	--	465.93
MW-49	1/20/06	494.40	ND	21.43	--	472.97	--	--	472.97
	3/17/06	494.40	ND	18.15	--	476.25	--	--	476.25
	5/26/06	494.40	ND	22.51	--	471.89	--	--	471.89
MW-50	1/20/06	495.52	ND	22.41	--	473.11	--	--	473.11
	3/17/06	495.52	ND	19.65	--	475.87	--	--	475.87
	5/26/06	495.52	ND	23.85	--	471.67	--	--	471.67
MW-51	1/20/06	492.22	ND	18.77	--	473.45	--	--	473.45
	3/17/06	492.22	ND	16.64	--	475.58	--	--	475.58
	5/26/06	492.22	ND	20.52	--	471.70	--	--	471.70
MW-52	1/20/06	499.84	ND	30.83	--	469.01	--	--	469.01
	3/17/06	499.84	ND	29.64	--	470.20	--	--	470.20
	5/26/06	499.84	ND	33.11	--	466.73	--	--	466.73
MW-53	1/20/06	500.54	ND	31.46	--	469.08	--	--	469.08
	3/17/06	500.54	ND	30.31	--	470.23	--	--	470.23
	5/26/06	500.54	ND	33.77	--	466.77	--	--	466.77
MW-55	1/20/06	486.16	ND	14.81	--	471.35	--	--	471.35
	3/17/06	486.16	ND	13.41	--	472.75	--	--	472.75
	5/26/06	486.16	ND	16.93	--	469.23	--	--	469.23

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

Well	Date Measured	Measuring Point Elevation (ft-amsl)	Depth to LNAPL (ft-bmp)	Depth to Groundwater (ft-bmp)	Elevation of LNAPL (ft-amsl)	Uncorrected Water Table Elevation (ft-amsl)	LNAPL Thickness (ft)	Equivalent ¹ LNAPL Head (ft)	Corrected Water Table Elevation (ft-amsl)
MW-56	1/20/06	495.88	ND	26.72	--	469.16	--	--	469.16
	3/17/06	495.88	ND	23.43	--	472.45	--	--	472.45
	5/26/06	495.88	ND	27.40	--	468.48	--	--	468.48
MW-57	1/20/06	492.71	ND	23.5	--	469.21	--	--	469.21
	3/17/06	492.71	ND	23.00	--	469.71	--	--	469.71
	5/26/06	492.71	ND	24.25	--	468.46	--	--	468.46
MW-58S	1/20/06	495.50	26.19	26.46	469.31	469.04	0.27	0.22	469.26
	3/17/06	495.50	23.4	23.41	472.10	472.09	0.01	0.01	472.10
	5/26/06	495.50	27.23	27.80	468.27	467.70	0.57	0.46	468.16
MW-59S	1/20/06	482.69	ND	12.96	--	469.73	--	--	469.73
MW-60S	1/20/06	477.34	ND	8.91	--	468.43	--	--	468.43
MW-62	1/20/06	505.10	ND	35.92	--	469.18	--	--	469.18
	3/17/06	505.10	ND	33.33	--	471.77	--	--	471.77
	5/26/06	505.10	ND	36.90	--	468.20	--	--	468.20
MW-64	1/20/06	484.07	ND	13.11	--	470.96	--	--	470.96
	3/17/06	484.07	ND	11.15	--	472.92	--	--	472.92
	5/26/06	484.07	ND	15.00	--	469.07	--	--	469.07
MW-65S	1/20/06	480.45	ND	11.47	--	468.98	--	--	468.98
MW-78	1/20/06	496.73	ND	26.48	--	470.25	--	--	470.25
	3/17/06	496.73	ND	22.37	--	474.36	--	--	474.36
	5/26/06	496.73	ND	26.70	--	470.03	--	--	470.03
MW-79	1/20/06	496.05	ND	23.24	--	472.81	--	--	472.81
	3/17/06	496.05	ND	19.70	--	476.35	--	--	476.35
	5/26/06	496.05	ND	23.86	--	472.19	--	--	472.19
MW-80	1/20/06	492.08	ND	21.92	--	470.16	--	--	470.16
	3/17/06	492.08	ND	18.71	--	473.37	--	--	473.37
	5/26/06	492.08	ND	22.84	--	469.24	--	--	469.24
MW-81S	1/20/06	507.72	ND	39.07	--	468.65	--	--	468.65
	3/17/06	507.72	ND	38.09	--	469.63	--	--	469.63
	5/26/06	507.72	ND	41.40	--	466.32	--	--	466.32
MW-84S	1/20/06	483.57	ND	11.64	--	471.93	--	--	471.93
	3/17/06	483.57	ND	8.00	--	475.57	--	--	475.57
MW-85S	1/20/06	484.07	ND	14.46	--	469.61	--	--	469.61
	3/17/06	484.07	ND	13.70	--	470.37	--	--	470.37
	5/26/06	484.07	ND	16.95	--	467.12	--	--	467.12
MW-86	1/20/06	483.45	ND	13.59	--	469.86	--	--	469.86
	3/17/06	483.45	11.47	11.55	471.98	471.90	0.08	0.06	471.96
	5/26/06	483.45	15.26	16.46	468.19	466.99	1.20	0.96	467.95

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

Well	Date Measured	Measuring Point Elevation (ft-amsl)	Depth to LNAPL (ft-bmp)	Depth to Groundwater (ft-bmp)	Elevation of LNAPL (ft-amsl)	Uncorrected Water Table Elevation (ft-amsl)	LANPL Thickness (ft)	Equivalent ¹ LNAPL Head (ft)	Corrected Water Table Elevation (ft-amsl)
MW-87S	1/20/06	482.68	ND	12.81	--	469.87	--	--	469.87
	3/17/06	482.68	10.97	11.45	471.71	471.23	0.48	0.38	471.61
	5/26/06	482.68	ND	14.65	--	468.03	--	--	468.03
MW-88	1/20/06	481.99	ND	12.26	--	469.73	--	--	469.73
	3/17/06	481.99	ND	11.37	--	470.62	--	--	470.62
	5/26/06	481.99	14.32	14.45	467.67	467.54	0.13	0.10	467.64
MW-89	1/20/06	483.46	ND	13.62	--	469.84	--	--	469.84
	3/17/06	483.46	ND	11.03	--	472.43	--	--	472.43
	5/26/06	483.46	ND	14.95	--	468.51	--	--	468.51
MW-92S	5/26/06	521.85	ND	55.53	--	466.32	--	--	466.32
MW-93S	1/20/06	528.71	ND	60.15	--	468.56	--	--	468.56
	3/17/06	528.71	ND	59.10	--	469.61	--	--	469.61
	5/26/06	528.71	ND	62.03	--	466.68	--	--	466.68
MW-94S	1/20/06	529.16	ND	61.3	--	467.86	--	--	467.86
	3/17/06	529.16	ND	60.11	--	469.05	--	--	469.05
	5/26/06	529.16	ND	62.91	--	466.25	--	--	466.25
MW-95S	1/20/06	541.47	ND	74.15	--	467.32	--	--	467.32
	3/17/06	541.47	ND	73.38	--	468.09	--	--	468.09
	5/26/06	541.47	ND	75.53	--	465.94	--	--	465.94
MW-96S	1/20/06	526.02	ND	57.21	--	468.81	--	--	468.81
	3/17/06	526.02	ND	55.84	--	470.18	--	--	470.18
	5/26/06	525.48	ND	58.74	--	466.74	--	--	466.74
MW-98S	1/20/06	501.37	ND	32.52	--	468.85	--	--	468.85
	3/17/06	501.37	ND	30.68	--	470.69	--	--	470.69
	5/26/06	501.37	ND	34.40	--	466.97	--	--	466.97
MW-99S	1/20/06	524.25	ND	55.88	--	468.37	--	--	468.37
	3/17/06	524.25	ND	54.67	--	469.58	--	--	469.58
	5/26/06	524.25	ND	57.40	--	466.85	--	--	466.85
MW-100S	1/20/06	541.67	ND	73.8	--	467.87	--	--	467.87
	3/17/06	541.67	ND	73.35	--	468.32	--	--	468.32
	5/26/06	541.67	ND	75.02	--	466.65	--	--	466.65
MW-101S	1/20/06	527.57	ND	59.39	--	468.18	--	--	468.18
	3/17/06	527.57	ND	58.51	--	469.06	--	--	469.06
	5/26/06	527.57	ND	60.98	--	466.59	--	--	466.59
MW-103S	1/20/06	482.35	ND	12.13	--	470.22	--	--	470.22
	3/17/06	482.35	ND	10.90	--	471.45	--	--	471.45
	5/26/06	482.35	ND	14.18	--	468.17	--	--	468.17
MW-104S	1/20/06	486.00	ND	14.68	--	471.32	--	--	471.32

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

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MW-104S	3/17/06	486.00	ND	12.72	--	473.28	--	--	473.28
	5/26/06	486.00	ND	16.75	--	469.25	--	--	469.25
MW-105S	1/20/06	488.87	ND	17.63	--	471.24	--	--	471.24
	3/17/06	488.87	ND	14.21	--	474.66	--	--	474.66
	5/26/06	488.87	ND	18.79	--	470.08	--	--	470.08
MW-107S	1/20/06	493.37	ND	22.46	--	470.91	--	--	470.91
	3/17/06	493.37	ND	18.14	--	475.23	--	--	475.23
	5/26/06	493.37	ND	22.73	--	470.64	--	--	470.64
MW-109S	1/20/06	485.02	ND	11.86	--	473.16	--	--	473.16
	3/17/06	485.02	ND	9.38	--	475.64	--	--	475.64
	5/26/06	485.02	ND	13.85	--	471.17	--	--	471.17
MW-111S	1/20/06	495.41	ND	22.34	--	473.07	--	--	473.07
	3/17/06	495.41	ND	19.62	--	475.79	--	--	475.79
	5/26/06	495.41	ND	23.77	--	471.64	--	--	471.64
MW-112	1/20/06	501.94	ND	33.03	--	468.91	--	--	468.91
	3/17/06	501.94	ND	31.76	--	470.18	--	--	470.18
	5/26/06	501.94	ND	35.16	--	466.78	--	--	466.78
MW-113	1/20/06	543.73	ND	75.23	--	468.50	--	--	468.50
	3/17/06	543.73	ND	74.60	--	469.13	--	--	469.13
	5/26/06	543.73	ND	76.19	--	467.54	--	--	467.54
MW-115S	1/20/06	506.52	ND	38.99	--	467.53	--	--	467.53
	3/17/06	506.52	ND	37.41	--	469.11	--	--	469.11
	5/26/06	506.52	ND	40.45	--	466.07	--	--	466.07
MW-119	1/20/06	507.14	ND	41.73	--	465.41	--	--	465.41
	3/17/06	507.14	ND	39.44	--	467.70	--	--	467.70
	5/26/06	507.14	ND	41.92	--	465.22	--	--	465.22
MW-120	1/20/06	503.72	ND	36.14	--	467.58	--	--	467.58
	3/17/06	503.72	ND	33.97	--	469.75	--	--	469.75
	5/26/06	503.72	ND	38.12	--	465.60	--	--	465.60
MW-121	1/20/06	506.55	ND	37.63	--	468.92	--	--	468.92
	3/17/06	506.55	ND	35.91	--	470.64	--	--	470.64
	5/26/06	506.55	ND	39.42	--	467.13	--	--	467.13
MW-122	1/20/06	531.22	ND	63.17	--	468.05	--	--	468.05
	3/17/06	531.22	ND	62.47	--	468.75	--	--	468.75
	5/26/06	531.22	ND	64.49	--	466.73	--	--	466.73
MW-124	1/20/06	543.81	ND	76.39	--	467.42	--	--	467.42
	3/17/06	543.81	ND	76.00	--	467.81	--	--	467.81
	5/26/06	543.81	ND	77.56	--	466.25	--	--	466.25

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

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MW-125	1/20/06	538.37	ND	71.08	--	467.29	--	--	467.29
	3/17/06	538.37	ND	70.49	--	467.88	--	--	467.88
	5/26/06	538.37	ND	72.49	--	465.88	--	--	465.88
MW-126	1/20/06	528.14	ND	60.2	--	467.94	--	--	467.94
	3/17/06	528.14	ND	59.11	--	469.03	--	--	469.03
	5/26/06	528.14	ND	62.27	--	465.87	--	--	465.87
MW-127	1/20/06	526.45	ND	58.23	--	468.22	--	--	468.22
	3/17/06	526.45	ND	57.23	--	469.22	--	--	469.22
	5/26/06	526.45	ND	60.00	--	466.45	--	--	466.45
MW-128	1/20/06	529.98	ND	61.79	--	468.19	--	--	468.19
	3/17/06	529.98	ND	60.74	--	469.24	--	--	469.24
	5/26/06	529.98	ND	62.82	--	467.16	--	--	467.16
MW-129	1/20/06	543.19	ND	75.41	--	467.78	--	--	467.78
	3/17/06	543.19	ND	75.01	--	468.18	--	--	468.18
	5/26/06	543.19	ND	76.49	--	466.70	--	--	466.70
MW-130	1/20/06	542.97	ND	63.31	--	479.66	--	--	479.66
	3/17/06	542.97	ND	63.38	--	479.59	--	--	479.59
	5/26/06	542.97	ND	63.34	--	479.63	--	--	479.63
GPW-1S	1/20/06	476.27	ND	9.33	--	466.94	--	--	466.94
	3/17/06	476.27	ND	7.94	--	468.33	--	--	468.33
	5/26/06	476.27	ND	12.66	--	463.61	--	--	463.61
GPW-2S	1/20/06	474.75	ND	7.95	--	466.80	--	--	466.80
	3/17/06	474.75	ND	7.83	--	466.92	--	--	466.92
	5/26/06	474.75	ND	11.76	--	462.99	--	--	462.99
GPW-3S	1/20/06	480.53	ND	13.87	--	466.66	--	--	466.66
	3/17/06	480.53	ND	9.16	--	471.37	--	--	471.37
	5/26/06	480.53	ND	16.11	--	464.42	--	--	464.42
GPW-4S	1/20/06	480.77	ND	14.07	--	466.70	--	--	466.70
	3/17/06	480.77	ND	10.07	--	470.70	--	--	470.70
	5/26/06	480.77	ND	16.69	--	464.08	--	--	464.08
GPW-5S	1/20/06	480.77	ND	13.93	--	466.84	--	--	466.84
	3/17/06	480.77	ND	9.59	--	471.18	--	--	471.18
	5/26/06	480.77	ND	16.39	--	464.38	--	--	464.38
L-1RR	1/20/06	493.90	ND	22.89	--	471.01	--	--	471.01
	3/17/06	493.90	ND	18.70	--	475.20	--	--	475.20
	5/26/06	493.90	ND	23.05	--	470.85	--	--	470.85
L-2R	1/20/06	492.19	ND	21.63	--	470.56	--	--	470.56
	3/17/06	492.19	ND	16.52	--	475.67	--	--	475.67

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L-2R	5/26/06	492.19	ND	20.91	--	471.28	--	--	471.28
L-3R	1/20/06	490.99	ND	20.53	--	470.46	--	--	470.46
	3/17/06	490.99	ND	16.52	--	474.47	--	--	474.47
	5/26/06	490.99	ND	20.99	--	470.00	--	--	470.00
L-4R	1/20/06	494.93	ND	24.05	--	470.88	--	--	470.88
	3/17/06	494.93	ND	19.85	--	475.08	--	--	475.08
	5/26/06	495.91	ND	25.06	--	470.85	--	--	470.85
L-5R	1/20/06	493.41	ND	21.63	--	471.78	--	--	471.78
	3/17/06	493.41	ND	17.45	--	475.96	--	--	475.96
	5/26/06	493.41	ND	22.31	--	471.10	--	--	471.10
L-7	1/20/06	496.90	ND	16.26	--	480.64	--	--	480.64
	3/17/06	496.90	ND	25.90	--	471.00	--	--	471.00
PROD_15	1/20/06	508.88	ND	40.03	--	468.85	--	--	468.85
	3/17/06	508.88	ND	46.58	--	462.30	--	--	462.30
	5/26/06	508.88	ND	51.00	--	457.88	--	--	457.88
PROD_19	1/20/06	502.56	ND	34.32	--	468.24	--	--	468.24
	3/17/06	502.56	ND	32.80	--	469.76	--	--	469.76
	5/26/06	502.56	ND	35.35	--	467.21	--	--	467.21
PROD_20	1/20/06	502.96	ND	34.11	--	468.85	--	--	468.85
	3/17/06	502.96	ND	33.55	--	469.41	--	--	469.41
	5/26/06	502.96	ND	36.47	--	466.49	--	--	466.49
PROD_21	1/20/06	504.63	ND	35.57	--	469.06	--	--	469.06
	3/17/06	504.63	ND	33.93	--	470.70	--	--	470.70
	5/26/06	504.63	ND	37.40	--	467.23	--	--	467.23
PROD_23	1/20/06	504.31	ND	35.68	--	468.63	--	--	468.63
	3/17/06	504.31	ND	34.33	--	469.98	--	--	469.98
	5/26/06	504.31	ND	38.30	--	466.01	--	--	466.01
RBGP-44	1/20/06	482.18	ND	15.08	--	470.80	--	--	470.80
	3/17/06	482.18	ND	15.86	--	470.21	--	--	470.21
	5/26/06	482.45	ND	18.85	--	468.22	--	--	468.22
RW-15B	1/20/06	491.14	ND	20.45	--	470.69	--	--	470.69
T-3	1/20/06	496.22	ND	23.5	--	472.72	--	--	472.72
	3/17/06	496.22	ND	19.80	--	476.42	--	--	476.42
	5/26/06	496.22	ND	24.19	--	472.03	--	--	472.03
T-5	1/20/06	497.28	ND	24.37	--	472.91	--	--	472.91
	3/17/06	497.28	ND	20.90	--	476.38	--	--	476.38
	5/26/06	497.28	ND	25.33	--	471.95	--	--	471.95
TH-1S	1/20/06	477.42	ND	10.74	--	466.68	--	--	466.68

Table 1. Fluid Level Summary, Chevron Cincinnati Facility, Hooven, Ohio

Well	Date Measured	Measuring Point Elevation (ft-amsl)	Depth to LNAPL (ft-bmp)	Depth to Groundwater (ft-bmp)	Elevation of LNAPL (ft-amsl)	Uncorrected Water Table Elevation (ft-amsl)	LNAPL Thickness (ft)	Equivalent ¹ LNAPL Head (ft)	Corrected Water Table Elevation (ft-amsl)
TH-1S	3/17/06	477.42	ND	6.67	--	470.75	--	--	470.75
	5/26/06	477.42	ND	13.29	--	464.13	--	--	464.13
TH-2	1/20/06	473.89	ND	7.21	--	466.68	--	--	466.68
	3/17/06	473.89	ND	5.50	--	468.39	--	--	468.39
	5/26/06	473.89	ND	10.55	--	463.34	--	--	463.34
TH-3	1/20/06	474.73	ND	8.11	--	466.62	--	--	466.62
	5/26/06	474.73	ND	9.80	--	464.93	--	--	464.93

Notes :

ft - feet
 ft - amsl - feet above mean sea level
 ft - bmp - feet below measuring point
 ND - not detected
 NA - not available

¹ Equivalent LNAPL Head is calculated as the LNAPL thickness multiplied by the LNAPL density relative to water (0.8).

Table 2a. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Volatile Organic Constituents)

Sample ID	Date	Acetone (mg/L)	Benzene (mg/L)	Bromo dichloro methane (mg/L)	2- Butanone (mg/L)	Chloroform (mg/L)	cis-1,2- Dichloro ethene (mg/L)	Cyclohexane (mg/L)
MW-7	4/26/06	0.013 J	0.066	ND(0.001)	0.005 J	ND(0.0008)	ND(0.0008)	0.27
TMW-4I	4/27/06	ND(0.006)	ND(0.0005)	ND(0.001)	ND(0.003)	ND(0.0008)	ND(0.0008)	ND(0.002)
MW-23	4/25/06	--	ND(0.0005)	--	--	--	--	--
MW-27	4/27/06	--	ND(0.0005)	--	--	--	--	--
MW-33	4/25/06	--	ND(0.0005)	--	--	--	--	--
MW-35	3/27/06	ND(0.006)	ND(0.0005)	ND(0.001)	ND(0.003)	ND(0.0008)	ND(0.0008)	ND(0.002)
MW-48S	4/27/06	ND(0.012)	0.004 J	ND(0.002)	0.007 J	ND(0.002)	ND(0.002)	0.29
MW-48D	4/27/06	--	ND(0.0005)	--	--	--	--	--
MW-81S	3/27/06	0.022	0.37	ND(0.001)	0.005 J	ND(0.0008)	ND(0.0008)	0.21
MW-81D	3/27/06	ND(0.006)	0.004 J	ND(0.001)	ND(0.003)	ND(0.0008)	ND(0.0008)	0.003 J
MW-85S	4/26/06	0.019 J	0.075	ND(0.001)	0.005 J	ND(0.0008)	ND(0.0008)	0.71
MW-85D	4/26/06	--	ND(0.0005)	--	--	--	--	--
MW-94S	3/23/06	ND(0.006)	ND(0.0005)	ND(0.001)	ND(0.003)	ND(0.0008)	ND(0.0008)	0.008
MW-95S	3/24/06	ND(0.006)	ND(0.0005)	ND(0.001)	ND(0.003)	ND(0.0008)	ND(0.0008)	ND(0.002)
MW-95D	3/24/06	ND(0.006)	ND(0.0005)	ND(0.001)	ND(0.003)	ND(0.0008)	ND(0.0008)	ND(0.002)
MW-99S	4/27/06	--	0.15	--	--	--	--	--
MW-100S	3/24/06	--	ND(0.0005)	--	--	--	--	--
MW-101S	4/27/06	--	ND(0.0005)	--	--	--	--	--
MW-104S	4/26/06	--	ND(0.0005)	--	--	--	--	--
MW-113	3/24/06	--	ND(0.0005)	--	--	--	--	--
MW-115S	3/27/06	--	ND(0.0005)	--	--	--	--	--
MW-115D	3/27/06	--	ND(0.0005)	--	--	--	--	--
MW-120	4/27/06	--	ND(0.0005)	--	--	--	--	--
MW-128	4/27/06	0.011 J	0.05	ND(0.001)	0.003 J	ND(0.0008)	ND(0.0008)	0.39 E
L-4R	4/25/06	--	ND(0.0005)	--	--	--	--	--
PROD_15	4/28/06	--	0.012	--	--	--	--	--

Table 2a. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Volatile Organic Constituents)

Sample ID	Date	Acetone (mg/L)	Benzene (mg/L)	Bromo dichloro methane (mg/L)	2- Butanone (mg/L)	Chloroform (mg/L)	cis-1,2- Dichloro ethene (mg/L)	Cyclohexane (mg/L)
TH-1S	3/23/06	--	0.027	--	--	--	--	--
TH-2	3/23/06	--	0.002 J	--	--	--	--	--
Trip Blank	3/27/06	ND(0.006)	ND(0.0005)	0.001 J	ND(0.003)	0.003 J	ND(0.0008)	ND(0.002)
	4/25/06	ND(0.006)	ND(0.0005)	0.003 J	ND(0.003)	0.004 J	0.0009 J	ND(0.002)
	5/2/06	--	ND(0.0005)	--	--	--	--	--

Notes:

ND Not detected at the indicated laboratory reporting limit
 J Analyte concentration less than the laboratory reporting limit
 E Estimated due to interference
 mg/L milligrams per liter
 -- Not analyzed

Table 2a. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Volatile Organic Constituents)

Sample ID	Date	Ethyl- benzene (mg/L)	Hexane (mg/L)	Isopropyl- benzene (mg/L)	Methylene Chloride (mg/L)	Naphthalene (mg/L)	n-Butyl- benzene (mg/L)	n-Propyl- benzene (mg/L)
MW-7	4/26/06	0.11	0.044	0.008	ND(0.002)	0.038	0.003 J	0.017
TMW-4I	4/27/06	ND(0.0008)	ND(0.002)	ND(0.001)	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
MW-23	4/25/06	ND(0.0008)	--	--	--	--	--	--
MW-27	4/27/06	ND(0.0008)	--	--	--	--	--	--
MW-33	4/25/06	ND(0.0008)	--	--	--	--	--	--
MW-35	3/27/06	ND(0.0008)	ND(0.002)	ND(0.001)	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
MW-48S	4/27/06	0.22	0.012	0.041	ND(0.004)	0.06	0.019	0.16
MW-48D	4/27/06	ND(0.0008)	--	--	--	--	--	--
MW-81S	3/27/06	0.077	0.016	0.091	ND(0.002)	0.01	0.03	0.28
MW-81D	3/27/06	ND(0.0008)	ND(0.002)	ND(0.001)	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
MW-85S	4/26/06	0.9	0.22	0.11	ND(0.002)	0.29	0.019	0.2
MW-85D	4/26/06	ND(0.0008)	--	--	--	--	--	--
MW-94S	3/23/06	ND(0.0008)	ND(0.002)	0.001 J	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
MW-95S	3/24/06	ND(0.0008)	ND(0.002)	ND(0.001)	0.004 J	ND(0.001)	ND(0.001)	ND(0.001)
MW-95D	3/24/06	ND(0.0008)	ND(0.002)	ND(0.001)	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
MW-99S	4/27/06	0.47	--	--	--	--	--	--
MW-100S	3/24/06	ND(0.0008)	--	--	--	--	--	--
MW-101S	4/27/06	ND(0.0008)	--	--	--	--	--	--
MW-104S	4/26/06	ND(0.0008)	--	--	--	--	--	--
MW-113	3/24/06	ND(0.0008)	--	--	--	--	--	--
MW-115S	3/27/06	ND(0.0008)	--	--	--	--	--	--
MW-115D	3/27/06	ND(0.0008)	--	--	--	--	--	--
MW-120	4/27/06	ND(0.0008)	--	--	--	--	--	--
MW-128	4/27/06	0.035	0.021	0.08	ND(0.002)	0.001 J	0.022	0.16
L-4R	4/25/06	ND(0.0008)	--	--	--	--	--	--
PROD_15	4/28/06	0.018	--	--	--	--	--	--

Table 2a. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Volatile Organic Constituents)

Sample ID	Date	Ethyl- benzene (mg/L)	Hexane (mg/L)	Isopropyl- benzene (mg/L)	Methylene Chloride (mg/L)	Naphthalene (mg/L)	n-Butyl- benzene (mg/L)	n-Propyl- benzene (mg/L)
TH-1S	3/23/06	0.33	--	--	--	--	--	--
TH-2	3/23/06	0.048	--	--	--	--	--	--
Trip Blank	3/27/06	ND(0.0008)	ND(0.002)	ND(0.001)	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
	4/25/06	ND(0.0008)	ND(0.002)	ND(0.001)	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)
	5/2/06	ND(0.0008)	--	--	--	--	--	--

Notes:

ND Not detected at the indicated laboratory reporting limit
J Analyte concentration less than the laboratory reporting limit
E Estimated due to interference
mg/L milligrams per liter
-- Not analyzed

Table 2a. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Volatile Organic Constituents)

Sample ID	Date	sec-Butyl- benzene (mg/L)	Toluene (mg/L)	1,2,4- Trimethyl benzene (mg/L)	1,3,5- Trimethyl- benzene (mg/L)	m,p- Xylene (mg/L)	o- Xylene (mg/L)	Xylenes (mg/L)
MW-7	4/26/06	0.002 J	0.01	0.18	0.068	0.32	0.016	--
TMW-4I	4/27/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
MW-23	4/25/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-27	4/27/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-33	4/25/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-35	3/27/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
MW-48S	4/27/06	0.011	0.002 J	0.62 E	0.11	0.24	0.046	--
MW-48D	4/27/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-81S	3/27/06	0.018	0.01	0.003 J	0.012	0.05	0.002 J	--
MW-81D	3/27/06	ND(0.001)	0.004 J	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
MW-85S	4/26/06	0.012	0.016	0.84	0.34	0.83	0.045	--
MW-85D	4/26/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-94S	3/23/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
MW-95S	3/24/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
MW-95D	3/24/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
MW-99S	4/27/06	--	0.062	--	--	0.57	0.026	--
MW-100S	3/24/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-101S	4/27/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-104S	4/26/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-113	3/24/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-115S	3/27/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-115D	3/27/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-120	4/27/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
MW-128	4/27/06	0.013	0.003 J	0.002 J	0.039	0.025	0.001 J	--
L-4R	4/25/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	--
PROD_15	4/28/06	--	0.0008 J	--	--	0.014	ND(0.0008)	0.014

Table 2a. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Volatile Organic Constituents)

Sample ID	Date	sec-Butyl- benzene (mg/L)	Toluene (mg/L)	1,2,4- Trimethyl benzene (mg/L)	1,3,5- Trimethyl- benzene (mg/L)	m,p- Xylene (mg/L)	o- Xylene (mg/L)	Xylenes (mg/L)
TH-1S	3/23/06	--	0.011	--	--	0.48	0.024	--
TH-2	3/23/06	--	0.009	--	--	0.073	0.013	--
Trip Blank	3/27/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
	4/25/06	ND(0.001)	ND(0.0007)	ND(0.001)	ND(0.001)	ND(0.0008)	ND(0.0008)	--
	5/2/06	--	ND(0.0007)	--	--	ND(0.0008)	ND(0.0008)	ND(0.0008)

Notes:

ND Not detected at the indicated laboratory reporting limit
J Analyte concentration less than the laboratory reporting limit
E Estimated due to interference
mg/L milligrams per liter
-- Not analyzed

Table 2b. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Semi-Volatile Organic Constituents)

Sample ID	Date	1-Methyl naphthalene (mg/L)	2,4-Dimethyl phenol (mg/L)	2-Methyl naphthalene (mg/L)	Acenaphthene (mg/L)	Bis(2-ethylhexyl) phthalate (mg/L)	Dibenzofuran (mg/L)
MW-7	4/26/06	0.015	ND(0.003)	0.01	ND(0.001)	ND(0.002)	ND(0.001)
TMW-4I	4/27/06	ND(0.001)	ND(0.003)	ND(0.001)	ND(0.001)	ND(0.002)	ND(0.001)
MW-35	3/27/06	ND(0.001)	ND(0.003)	ND(0.001)	ND(0.001)	ND(0.002)	ND(0.001)
MW-48S	4/27/06	0.089	ND(0.003)	0.004 J	0.002 J	0.004 J	0.001 J
MW-81S	3/27/06	0.13	ND(0.003)	0.029	0.002 J	ND(0.002)	0.001 J
MW-81D	3/27/06	ND(0.001)	ND(0.003)	ND(0.001)	ND(0.001)	ND(0.002)	ND(0.001)
MW-85S	4/26/06	0.088	0.003 J	0.12	0.001 J	ND(0.002)	ND(0.001)
MW-94S	3/23/06	ND(0.001)	ND(0.003)	ND(0.001)	ND(0.001)	ND(0.002)	ND(0.001)
MW-95S	3/24/06	ND(0.001)	ND(0.003)	ND(0.001)	ND(0.001)	ND(0.002)	ND(0.001)
MW-95D	3/24/06	ND(0.001)	ND(0.003)	ND(0.001)	ND(0.001)	ND(0.002)	ND(0.001)
MW-128	4/27/06	0.084	ND(0.003)	0.021	0.002 J	0.013	ND(0.001)

Notes:

ND Not detected at the indicated laboratory reporting limit

J Analyte concentration less than the laboratory reporting limit

mg/L milligrams per liter

Table 2b. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Semi-Volatile Organic Constituents)

Sample ID	Date	Di-n-octylphthalate (mg/L)	Fluorene (mg/L)	Indene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Phenol (mg/L)
MW-7	4/26/06	ND(0.002)	ND(0.001)	0.003 J	0.027	ND(0.001)	ND(0.001)
TMW-4I	4/27/06	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
MW-35	3/27/06	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
MW-48S	4/27/06	0.004 J	0.002 J	ND(0.0009)	0.048	0.003 J	ND(0.0009)
MW-81S	3/27/06	ND(0.002)	0.002 J	ND(0.001)	0.01	0.003 J	0.004 J
MW-81D	3/27/06	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
MW-85S	4/26/06	ND(0.002)	0.001 J	0.01	0.2	0.002 J	ND(0.001)
MW-94S	3/23/06	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
MW-95S	3/24/06	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
MW-95D	3/24/06	ND(0.002)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
MW-128	4/27/06	ND(0.002)	0.002 J	ND(0.001)	ND(0.001)	0.002 J	ND(0.001)

Notes:

ND Not detected at the indicated laboratory reporting limit

J Analyte concentration less than the laboratory reporting limit

mg/L milligrams per liter

Table 2c. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Dissolved Lead)

Sample ID	Date	Lead, Dissolved (mg/L)
MW-7	4/26/06	ND(0.0084)
TMW-4I	4/27/06	ND(0.0084)
MW-23	4/25/06	ND(0.0084)
MW-27	4/27/06	ND(0.0084)
MW-33	4/25/06	ND(0.0084)
MW-35	3/27/06	ND(0.0084)
MW-48S	4/27/06	ND(0.0084)
MW-48D	4/27/06	ND(0.0084)
MW-81S	3/27/06	ND(0.0084)
MW-81D	3/27/06	ND(0.0084)
MW-85S	4/26/06	ND(0.0084)
MW-85D	4/26/06	ND(0.0084)
MW-94S	3/23/06	ND(0.0084)
MW-95S	3/24/06	ND(0.0084)
MW-95D	3/24/06	ND(0.0084)
MW-99S	4/27/06	ND(0.0084)
MW-100S	3/24/06	ND(0.0084)
MW-101S	4/27/06	ND(0.0084)
MW-104S	4/26/06	ND(0.0084)
MW-113	3/24/06	ND(0.0084)
MW-115S	3/27/06	ND(0.0084)
MW-115D	3/27/06	ND(0.0084)
MW-120	4/27/06	ND(0.0084)
MW-128	4/27/06	ND(0.0084)
L-4R	4/25/06	ND(0.0084)
PROD_15	4/28/06	ND(0.0084)

Table 2c. Groundwater Quality Analytical Results, Chevron Cincinnati Facility, Hooven, Ohio (Dissolved Lead)

Sample ID	Date	Lead, Dissolved (mg/L)
TH-1S	3/23/06	ND(0.0084)
TH-2	3/23/06	ND(0.0084)

Notes:

ND Not detected at the indicated laboratory reporting limit
mg/L milligrams per liter