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**March 2009 Interim
Groundwater Monitoring
Report**

FORMER HYATT CLARK
INDUSTRIES, INC. SITE, CLARK, NJ

June 2009

CERTIFICATION
N.J.A.C. 7:26C-1.2 et seq.

Any person making a submission to the Department required by this chapter and pursuant to N.J.A.C. 7:26E, shall include the following signature and notarized certification, for each technical submittal. Additionally, the certification shall indicate the case name and address, case number, type of documents submitted, e.g., Remedial Action Report, for each technical submittal.

TYPE OF DOCUMENT: March 2009 Interim Groundwater Monitoring Report

CASE NAME: Former Hyatt Clark Industries, Inc. Site

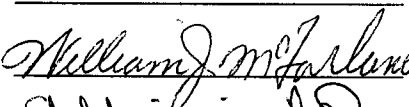
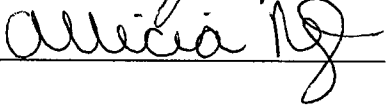
CASE NUMBER: ISRA Case No. E87769

CASE ADDRESS: 1300 Raritan Road, Clark, New Jersey

The following certification shall be signed by:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner of the proprietor, respectively, or:
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.
4. For persons other than 1 through 3 above, by the person with legal responsibility for the site.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

PRINTED NAME:	<u>William J. McFarland</u>	TITLE:	<u>Director - GM Worldwide Facilities Group Global Environmental Remediation & Plant Decommissioning</u>
SIGNATURE:	<u></u>	DATE:	<u>6-24-09</u>
NOTARY SIGNATURE:	<u></u>	DATE:	<u>6-24-09</u>

ALLICIA NAJOR
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF MACOMB
My Commission expires April 3, 2015
Acting in the County of Macomb

ARCADIS

March 2009 Interim
Groundwater Monitoring
Report

FORMER HYATT CLARK
INDUSTRIES, INC. SITE,
CLARK, NJ

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Introduction

ARCADIS US, Inc. was retained by General Motors Corporation (GM) to conduct the March 2009 Interim Groundwater Monitoring Event for the former Hyatt Clark Industries (HCI) Site located in Clark, New Jersey (Industrial Site Recovery Act - ISRA Case No. 87769). This was the 28th groundwater sampling event. Sampling was conducted in accordance with the NJDEP (2005) Field Sampling Procedures Manual (FSPM). The interim monitoring plan implemented in September 2005 is summarized in Table 1.

In addition to the wells included in the interim plan, off-site Wells MW-40 through MW-45 and MW-87 through MW-87B5 were sampled. The MW-87 series is a single bedrock well that is equipped with a FLUTe™ multi-port groundwater sampling system that is designed to collect water-level measurements and groundwater samples from five intervals. The sampling procedures for the multi-port sampling system are discussed below.

Three onsite wells (MW-15, OW-32D, and OW-46) were also sampled. These wells previously contained product and were sampled for VOC. The sampling of these wells is discussed below.

Methods

The methods used to complete the groundwater sampling event are summarized in the following sections. Well sampling was conducted from March 3 through 6 and on March 23, 2009.

Water-Level and Product Thickness Measurements

On March 2, 2009, water-level and product (LNAPL) thickness measurements were collected. Water-level and product thickness measurements are summarized in Table 2. Specific gravity data for the product, collected during previous investigations, was used to calculate the corrected water-level elevation for wells containing product. The measurements were used to develop a groundwater elevation contour map for the overburden (Figure 1), shallow bedrock (Figure 2) and deep bedrock (Figure 3) units.

Well Purging

Prior to sample collection, the monitoring wells were purged of approximately three times the volume of standing water in the wells. Purging was accomplished using a 2-inch diameter submersible pump. For wells requiring low flow sampling, purging and sampling were conducted using submersible pump prior to volume-averaged purging and sampling procedures. All wells were purged in accordance with NJDEP technical guidance. The pumps were decontaminated prior to use at each location and dedicated polyethylene tubing was used at each location. To minimize the potential to introduce turbidity into the well water, the purge rates did not exceed the development rates. The volume-averaged purging and low flow purging data are summarized in Table 3 and Table 5, respectively. Temperature, pH, specific conductance, dissolved oxygen, and turbidity were measured for each well during volume-averaged purging (Table 4). Depth to water measurements were also collected during purging and immediately prior to sampling.

Conventional Sampling

Groundwater samples were collected using volume-averaged procedures and were collected directly from the pump tubing, as required in NJDEP's 30 January 2008

letter. All wells were sampled within 24 hours of purge completion. Groundwater samples were collected and managed in accordance with NJDEP technical guidance.

Low Flow Sampling

Low flow sampling methods were also used to collect samples for polychlorinated biphenyls (PCB) analysis from each well that historically had a PCB exceedance. The sample for metals analysis from monitoring well MW-37B was also collected using low flow methods. The low flow purge data are summarized in Table 5. During low flow purging, temperature, pH, specific conductance, dissolved oxygen, and redox were measured for each well (Table 6). The field sampling forms are also provided in Appendix A.

After collection, all samples (conventional and low flow) were placed into coolers containing ice or ice packs. Field replicates, field (equipment) blanks, and matrix spike (MS)/matrix spike duplicate (MSD) samples were collected and analyzed for the full suite of laboratory parameters (refer to Appendix B). Trip blanks accompanied the sample bottle shipment to and from the laboratory. All samples were submitted to Test America, Inc. of Edison, New Jersey, a New Jersey-certified laboratory (No. 12028).

Multi-Port Groundwater Sampling

Groundwater samples were collected from MW-87B through MW-87B5 via a dedicated water FLUTE™ sampling system installed in a single bedrock borehole. The water FLUTE™ sampling system was developed and manufactured by Flexible Liner Underground Technologies, Ltd. Co. The sampling system was designed and installed to collect groundwater samples at five discrete depth intervals. The system

utilizes a series of valves, tubing, and sampling ports that are fabricated within an impermeable borehole liner. The system facilitates collection of groundwater samples from pre-specified intervals and prevents vertical migration of water within the borehole by establishing a continuous seal of the borehole wall. The use of the FLUTE™ system and the intervals were approved by NJDEP.

Prior to collection of groundwater samples, the sampling system was purged three times (i.e. three purge cycles) by applying a nitrogen gas pressure to the system. After each purge cycle was completed the nitrogen gas pressure was turned off to allow the system to recharge with groundwater from the bedrock formation. During purging, temperature, pH, specific conductance, dissolved oxygen, and redox were measured for each purge volume at each depth interval. The field sampling forms are provided in Appendix A.

Sample collection from the water FLUTE™ sampling system was conducted by employing a fourth purge cycle to the system. Nitrogen gas pressure applied to the system was reduced to achieve a slower flow rate during sample collection.

Results

The quality assurance/quality control evaluation of the analytical data is presented in Appendix B. The tabulated analytical data and the electronic deliverables (HAZSITE format) are presented in Appendix C. Figures showing the groundwater quality results for the overburden, shallow bedrock, and the deep bedrock are in Appendix D. Figures D-1 and D-2 show all historic results through March 2007. Figures D-3 and D-4 show results from September 2005 through March 2009. Figure D-5 shows groundwater monitoring results from the 100 Terminal Avenue Site relative to the former HCI Site .

Two tentatively identified compounds (TICs) were detected during the March 2009 event. One of the TICs was unknown and could not be evaluated. The remaining TIC identified was methyl tert butyl ether (MTBE) and was detected at an estimated concentration of 7.8 ug/l. The MTBE concentration is significantly less than the groundwater quality criteria of 70 ug/l. The TIC data is tabulated and provided in Appendix B.

Schedule

The next groundwater monitoring event is scheduled to be conducted in September 2009 and the monitoring report for this event is scheduled to be submitted to NJDEP in December 2009 (Figure 4).

Product Monitoring and Recovery

In March 2008, the absorbent socks in the wells where passive recovery is occurring were removed to allow product (if any) to accumulate. Product thickness measurements following the sock removal are summarized on Table 7. In March 2009, the absorbent socks were reinstated in the wells that contain product.

As of August 2008, six onsite wells that previously contained product no longer contained product. These wells (MW-15, OW-25S, OW-26S, OW-32D, OW-34, and OW-46) were sampled in August 2008 and the groundwater samples were analyzed for VOCs. During the March 2009 sampling event, Wells MW-15, OW-32D, and OW-46 were sampled for Priority Pollutant (PP) VOCs, PP semi-volatile organic compounds, PCBs and PP Metals. Due to a field oversight, samples were not collected for cyanide and phenols from these wells and from Well MW-20, which also formerly contained product. Cyanide and phenols will be collected from the former product wells during the September 2009 monitoring event. Wells OW-34 and OW-

26S were not sampled because during purging, product was observed in the purge water and on the purging equipment. Well OW-25S was not sampled because there was insufficient water in the well. Wells MW-15, OW-25S, OW-26S, OW-32D, OW-34, and OW-46 are scheduled to be sampled during the September 2009 event.

Total product recovered as of June 2009 is approximately 47,700 gallons.

As part of the GM's obligations under the Resource Conservation and Recovery Act Environmental Indicators Determination (CA750), pumping records for the US Gypsum wells are compiled annually and used to model deep bedrock groundwater to ensure that the impacted deep bedrock groundwater remains captured by these production wells. The 2008 pumping records for the US Gypsum production wells are summarized on Table 8. Consistent with the groundwater flow modeling conducted as part of the CA 750, the annual average pumping rate for 2008 was used in the modeling effort. The modeling results show that the impacted deep bedrock groundwater remains captured by these production wells.

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TABLES

Table 1. Interim Groundwater Sampling Plan, Former Hyatt Clark Industries Site, Clark, New Jersey.

Well Identification	Sampling Parameters							Sampling Frequency	Comments
	VAP VOCs	VAP SVOCs	VAP PCBs	LF PCBs	LF Metals*	VAP CN	VAP Phenols		
MW-1	X							Annual	Upgradient monitoring in overburden.
MW-1B	X							Annual	Upgradient monitoring in shallow bedrock.
MW-4	X		X	X				Annual	Downgradient monitoring in overburden.
MW-7	X		X	X				Annual	Interior monitoring in shallow bedrock. Well will not be sampled if MW-15 is sampled.
MW-8	X		X	X				Annual	Interior monitoring in overburden
MW-9B	X		X	X				Annual	Interior monitoring in shallow bedrock
MW-10	X							Annual	Upgradient monitoring in overburden.
MW-10B	X							Annual	Upgradient monitoring in deep bedrock.
MW-10B2	X							Annual	Upgradient monitoring in deep bedrock.
MW-10B3	X							Annual	Upgradient monitoring in deep bedrock.
MW-12	X		X	X				Annual	Upgradient monitoring in deep bedrock.
MW-13	X		X	X				Annual	Downgradient monitoring in overburden.
MW-15**	X		X	X	X	X		Annual	Downgradient monitoring in overburden.
MW-17A	X	X	X	X		X	X	Annual	Interior monitoring in overburden.
MW-18	X		X	X				Annual	Downgradient monitoring in overburden.
MW-19	X		X	X				Annual	Downgradient monitoring in overburden.
MW-20**	X	X	X	X	X	X	X	Annual	Interior monitoring in overburden
MW-21	X		X	X				Semi-annual	Interior monitoring in overburden.
MW-31B2	X		X	X				Annual	Interior monitoring in deep bedrock.
MW-31B3	X		X	X				Annual	Interior monitoring in deep bedrock.
OW-32D**	X	X	X	X	X	X	X	Annual	Interior monitoring in shallow bedrock
MW-36B	X		X	X				Annual	Downgradient monitoring in shallow bedrock.
MW-37	X		X	X				Semi-annual	Downgradient monitoring in overburden.
MW-37B	X		X	X				Semi-annual	Downgradient monitoring in shallow bedrock.
MW-37B2	X		X	X	X			Semi-annual	Downgradient monitoring in deep bedrock.
MW-37B3	X		X	X	X			Semi-annual	Downgradient monitoring in deep bedrock.
MW-38	X		X	X	X			Semi-annual	Downgradient monitoring in overburden.
MW-38B	X		X	X	X			Semi-annual	Downgradient monitoring in shallow bedrock.

Table 1. Interim Groundwater Sampling Plan, Former Hyatt Clark Industries Site, Clark, New Jersey.

Well Identification	Sampling Parameters						Sampling Frequency	Comments
	VAP VOCs	VAP SVOCs	VAP PCBs	LF PCBs	LF Metals*	VAP Phenols		
MW-39	X		X	X			Semi-annual	Downgradient monitoring in overburden.
MW-39B	X		X	X			Semi-annual	Downgradient monitoring in shallow bedrock.
MW-85B3	X		X	X			Annual	Downgradient monitoring in deep bedrock.
MW-86B3	X		X	X			Annual	Upgradient monitoring in deep bedrock.
MW-40	X						Annual	
MW-41	X						Annual	
MW-42	X						Annual	
MW-43	X						Annual	
MW-44	X						Annual	
MW-45	X						Annual	

VOCs Priority Pollutant (PP) volatile organic compounds.
 SVOCs Priority Pollutant (PP) semivolatile organic compounds.

PCBs Polychlorinated biphenyls.

VAP Volume-averaged purge.

LF Low flow.

* Includes total and dissolved metals.

** If wells do not contain free product, groundwater samples will be collected.

Annual Sampling and Reporting Schedule:

Wells sampled annually will be sampled in September and reports will be submitted to NJDEP in December. Wells sampled semi-annually will be sampled in March and September. Reports for the March sampling events will be submitted to NJDEP in June.

Table 2. Summary of Water-Level and Product Thickness Measurements, March 3, 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey.

Well I.D.	Measuring Point Elevation (ft msl)	Depth to Groundwater ¹ (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Groundwater Elevation (ft msl)	Corrected ^c Groundwater Elevation (ft msl)	Top of Screen Elevation (ft msl)
MW-1	73.04	14.82	---	0.00	58.22	58.22	50.60
MW-1B	73.33	26.88	---	0.00	46.45	46.45	23.90
MW-2	75.19	12.28	---	0.00	62.91	62.91	59.00
MW-3	74.78	21.28	---	0.00	53.50	53.50	47.90
MW-4	69.38	27.26	---	0.00	42.12	42.12	35.80
MW-5	78.03	24.71	---	0.00	53.32	53.32	49.80
MW-7	72.71	22.81	---	0.00	49.90	49.90	42.30
MW-8	76.10	32.11	---	0.00	43.99	43.99	51.30
MW-9	76.22	29.59	---	0.00	46.63	46.63	39.40
MW-9B	76.10	30.53	---	0.00	45.57	45.57	32.30
MW-10	70.45	14.84	---	0.00	55.61	55.61	50.70
MW-10B	69.91	25.72	---	0.00	44.19	44.19	-6.62
MW-10B2	71.81	NM	---	0.00	NM	NM	-86.70
MW-10B3**	70.20	29.00	---	0.00	41.20	41.20	-246.90
MW-11	72.09	24.62	---	0.00	47.47	47.47	35.40
MW-11B	72.03	30.27	---	0.00	41.76	41.76	13.90
MW-12	66.60	24.04	---	0.00	42.56	42.56	35.10
MW-13	69.00	24.84	---	0.00	44.16	44.16	45.00
MW-14	74.43	20.81	---	0.00	53.62	53.62	49.10
MW-15	73.12	24.75	---	0.00	48.37	48.37	44.50
MW-17A	75.27	20.67	---	0.00	54.60	54.60	52.10
MW-18	77.02	22.65	---	0.00	54.37	54.37	55.60
MW-19	79.72	27.13	---	0.00	52.59	52.59	45.50
MW-20	76.10	23.50	---	0.00	52.60	52.60	53.50
MW-21	79.07	25.96	---	0.00	53.11	53.11	51.70
MW-23	78.37	18.33	---	0.00	60.04	60.04	51.20
MW-31B2	81.61	NM	---	0.00	NM	NM	-48.60
MW-31B3**	83.07	41.94	---	0.00	41.13	41.13	-228.51
MW-35	76.94	27.48	---	0.00	49.46	49.46	59.90
MW-35B	76.70	32.73	---	0.00	43.97	43.97	34.50
MW-36B	62.98	27.21	---	0.00	35.77	35.77	22.40
MW-37	69.21	22.80	---	0.00	46.41	46.41	54.00
MW-37B	68.99	27.38	---	0.00	41.61	41.61	9.90
MW-37B2**	69.58	28.58	---	0.00	41.00	41.00	-115.82
MW-37B3	69.78	NM	---	0.00	NM	NM	-225.95
MW-38	73.07	19.22	---	0.00	53.85	53.85	60.30
MW-38B	72.86	28.08	---	0.00	44.78	44.78	14.70
MW-39	72.57	24.40	---	0.00	48.17	48.17	60.40
MW-39B	72.33	26.35	---	0.00	45.98	45.98	26.40
MW-40	66.74	11.71	---	0.00	55.03	55.03	54.90
MW-41	67.36	13.66	---	0.00	53.70	53.70	60.70
MW-42	67.33	15.52	---	0.00	51.81	51.81	60.50
MW-43	66.21	14.92	---	0.00	51.29	51.29	59.60
MW-44	64.46	13.22	---	0.00	51.24	51.24	58.00
MW-45	68.14	13.81	---	0.00	54.33	54.33	59.70
MW-84B3	78.60	NM	---	0.00	NM	NM	-354.53
MW-85B3**	65.36	24.18	---	0.00	41.18	41.18	-206.44
MW-86B3	72.41	NM	---	0.00	NM	NM	-293.57
MW-87B	67.15	NM	---	0.00	NM	NM	22.50
MW-87B2	67.18	NM	---	0.00	NM	NM	-27.50
MW-87B3	67.16	NM	---	0.00	NM	NM	-77.50
MW-87B4	67.17	NM	---	0.00	NM	NM	-197.50
MW-87B5**	67.15	25.10	---	0.00	42.05	42.05	-247.50

Table 2. Summary of Water-Level and Product Thickness Measurements, March 3, 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey.

Well I.D.	Measuring Point Elevation (ft msl)	Depth to Groundwater ¹ (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Groundwater Elevation (ft msl)	Corrected ² Groundwater Elevation (ft msl)	Top of Screen Elevation (ft msl)
OW-22*	76.89	NM	---	0.00	43.99	43.99	60.80
OW-24	76.98	20.69	---	0.00	56.29	56.29	65.70
OW-25S	77.84	22.36	---	0.00	55.48	55.48	64.50
OW-25M*	76.70	26.36	25.35	1.010	41.04	41.04	47.50
OW-25D	77.89	35.57	35.35	0.22	42.32	42.52	32.60
OW-26S	77.96	19.50	---	0.00	58.46	58.46	66.60
OW-26M	77.99	NM	NM	NM	NM	NM	52.30
OW-27*	77.92	NM	NM	NM	54.38	54.38	60.10
OW-28S*	80.82	NM	NM	NM	46.00	46.00	56.00
OW-28D*	78.29	NM	NM	NM	30.11	30.11	38.00
OW-29*	81.65	NM	NM	NM	49.03	49.03	51.60
OW-30	84.79	36.11	---	0.00	48.68	48.68	57.40
OW-31	83.21	33.30	---	0.00	49.91	49.91	55.70
OW-32S	77.05	15.92	---	0.00	61.13	61.13	61.60
OW-32D	77.15	24.20	---	0.00	52.95	52.95	47.90
OW-33	75.55	22.47	---	0.00	53.08	53.08	60.30
OW-34	81.55	29.40	---	0.00	52.15	52.15	50.00
OW-46	76.52	29.04	---	0.00	47.48	47.48	66.20
OW-47R*	78.13	NM	NM	NM	35.94	35.94	70.80
OW-49*	80.23	NM	NM	NM	42.19	42.19	72.00
OW-52D*	84.45	NM	NM	NM	31.45	31.45	45.00
OW-53D*	85.86	NM	NM	NM	33.32	33.32	45.40
OW-58*	86.09	NM	NM	NM	48.59	48.59	78.10
OW-58D*	86.59	NM	NM	NM	36.69	36.69	45.90
OW-59D*	84.43	NM	NM	NM	34.48	34.48	47.40
OW-64	76.13	22.92	---	0.00	53.21	53.21	68.80
OW-65	76.84	27.24	26.82	0.42	49.60	49.98	67.30
OW-66*	77.73	NM	NM	NM	36.27	36.27	70.60
OW-69D	82.18	37.54	---	0.00	44.64	44.64	42.90
OW-70D	85.67	41.11	---	0.00	44.56	44.56	40.00
OW-73	86.59	41.21	---	0.00	45.38	45.38	70.00
OW-75D*	84.48	NM	NM	NM	30.40	30.40	35.60
OW-76	76.54	22.89	---	0.00	53.65	53.65	70.80
OW-77D*	82.98	NM	NM	NM	26.67	26.67	39.50
OW-79D	79.49	32.35	---	0.00	47.14	47.14	44.80
OW-81	75.15	23.06	---	0.00	52.09	52.09	67.10
OW-82D	77.39	28.75	27.71	1.04	48.64	49.58	31.40
OW-83D	77.74	26.23	---	0.00	51.51	51.51	38.90

1 Depth to product and water as measured from the measuring point (i.e. top of inner well casing).

2 Corrected groundwater elevation is based on a specific gravity of 0.90 for product.

--- No product.

ft Feet.

msl Mean sea level.

LNAPL Light non-aqueous phase liquid.

NM Not measured

* Pumping well. Groundwater elevation represents the elevation of the pump intake.

** Measurement collected on March 23, 2009.

Table 3. Summary of Well Purge Data Using Standard Purge Methods, March 2009, Groundwater Monitoring, Former Hyatt Clark Industries Site, Clark, New Jersey.

Well I.D.	Well Purge		Pumping Rate (gpm)	Volume of Water Purged (gallons)	Sample Collection	
	Date	Completion Time			Date	Time
MW-15	3/3/2009	16:28	0.27	29	3/3/2009	16:27
MW-21	3/5/2009	13:05	0.11	21.5	3/5/2009	12:58
OW-32D	3/4/2009	19:12	0.22	28	3/4/2009	18:00
MW-37R	3/4/2009	13:12	0.27	19	3/4/2009	13:10
MW-37B	3/4/2009	14:00	0.18	25.1	3/4/2009	13:58
MW-37B2	3/4/2009	13:40	1.1	89	3/4/2009	13:38
MW-37B3	3/4/2009	17:37	1.5	143.2	3/4/2009	17:30
MW-38	3/3/2009	12:35	0.5	8.6	3/3/2009	12:27
MW-38B	3/3/2009	16:25	0.07	24	3/3/2009	16:25
MW-39	3/3/2009	11:31	0.07	2.3	3/3/2009	11:30
MW-39B	3/3/2009	12:02	0.3	17.5	3/3/2009	12:01
OW-46	3/5/2009	8:32	<0.5	20	3/6/2009	8:31
MW-87B	3/23/2009	13:17	<0.5	7.5	3/23/2009	13:15
MW-87B2	3/23/2009	13:22	<0.5	7.5	3/23/2009	13:20
MW-87B3	3/23/2009	13:27	<0.5	7.5	3/23/2009	13:25
MW-87B4	3/23/2009	13:32	<0.5	7.5	3/23/2009	13:30
MW-87B5	3/23/2009	13:37	<0.5	7.5	3/23/2009	13:35
gpm	Gallons per minute.					
--	Completion time not recorded.					

Table 4. Summary of Field Parameters Using Standard Purging Methods, March 2009, Groundwater Monitoring, Former Hyatt Clark Industries Site, Clark, New Jersey.

Well I.D.	pH (standard units)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Conductivity (umhos/cm)	Temperature (C)
MW-21	6.72	9.0	0.33	950	13.81
MW-37R	7.05	34.0	1.02	637	15.86
MW-37B	7.62	22.7	4.03	607	13.68
MW-37B2	7.39	0.05	0.57	543	13.07
MW-37B3	7.49	0.3	0.64	550	14.46
MW-38	6.73	7	0.44	869	13.20
MW-38B	6.89	16.9	0.7	0.581	10.3
MW-39	7.47	3.30	1.13	570	16.14
MW-39B	7.60	8.7	2.35	1	28.79
MW-87B	7.09	--	5.03	1362	14.46
MW-87B2	7.42	--	5.59	668	14.79
MW-87B3	7.57	--	5.81	461	14.99
MW-87B4	7.62	--	5.67	471	15.23
MW-87B5	7.58	--	5.90	516	14.79

mg/L Milligrams per liter.

NTUs Nephelometric turbidity units.

C Degrees celsius.

-- Meter malfunction/not collected

Note: Field parameters for the MW-87 series wells are from the third volume purged.

Table 5. Summary of Well Purge Data Using Low Flow Purge Methods, March 2009, Groundwater Monitoring, Former Hyatt Clark Industries Site, Clark, New Jersey.

Well I.D.	Well Purge		Pumping Rate (ml/m)	Sample Collection	
	Date	Stabilization Time		Date	Time
MW-21	3/5/2009	10:50	150	3/5/2009	10:53
MW-37R	3/4/2009	11:30	200	3/4/2009	11:34
MW-37B	3/4/2009	11:30	200	3/4/2009	11:34
MW-37B2	3/4/2009	11:42	200	3/4/2009	11:44
MW-37B3	3/4/2009	13:20	200	3/4/2009	13:23
MW-38	3/3/2009	12:00	200	3/3/2009	12:02
MW-38B	3/3/2009	14:30	200	3/3/2009	14:32
MW-39	3/3/2009	10:40	200	3/3/2009	10:43
MW-39B	3/3/2009	10:45	200	3/3/2009	13:46

ml/m Milliliters per minute.

Table 6. Summary of Field Parameters Using Low Flow Purge Methods, March 2009, Groundwater Monitoring, Former Hyatt Clark Industries Site, Clark, New Jersey.

Well I.D.	pH (standard units)	REDOX (mV)	Dissolved Oxygen (mg/L)	Conductivity (umhos/cm)	Temperature (C)
MW-21	6.72	73.6	0.30	9480	13.84
MW-37R	7.05	143.2	1.09	646	15.99
MW-37B	7.63	114.0	3.93	607	13.59
MW-37B2	7.39	139.3	0.53	546	13.25
MW-37B3	7.49	112.0	0.60	551	14.46
MW-38	6.73	118.4	0.44	869	14.09
MW-38B	6.89	-204.9	0.64	571	10.26
MW-39	7.49	215.3	1.17	572	16.12
MW-39B	7.60	134.1	2.35	800	14.38

mV Millivolts.
 mg/L Milligrams per liter.
 umhos/cm Micromhos per centimeter.
 C Degrees Celsius.
 -- Meter malfunction.

Table 7. Product Thickness Measurements, Former Hyatt Clark Industries Site, Clark, New Jersey

Date Well ID	LNAPL Thickness (feet)										
	3/4/2007	3/18/2008	3/24/2008	4/8/2008	5/8/2008	6/24/2008	7/25/2008	8/12/2008	9/2/2008	10/24/2008	
MW-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-25S	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	<0.01	0.0
OW-25D	0.03	0.05	0.01	0.03	0.07	0.14	0.14	0.16	0.16	0.17	0.17
OW-26M	0.0	0.0	0.0	<0.01	0.23	0.57	0.66	0.57	0.49	0.45	0.45
OW-32D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-34 ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
OW-46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-65	0.0	0.0	0.01	0.04	0.10	0.22	0.31	0.37	0.01	0.33	0.33
OW-82D	0.14	0.01	0.0	0.0	0.05	0.02	0.05	NM	0.07	0.01	0.01

1 Product thickness measurements at OW-34 are approximate.
NM Not measured.

Note: LNAPL absorbent socks were removed from the wells on 3/4/08. The absorbent socks were reinserted into Wells OW-25D, OW-26M, OW-34, OW-46, OW-65, and OW-82D on 3/30/09.

Table 7. Product Thickness Measurements, Former Hyatt Clark Industries Site, Clark, New Jersey

Date Well ID	LNAPL Thickness (feet)						
	11/17/2008	12/8/2008	1/5/2009	2/3/2009	3/3/2009	3/30/2009	5/1/2009
MW-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-25S	0.0	0.0	<0.01	<0.01	0.0	0.0	0.0
OW-25D	0.12	0.26	0.10	0.09	0.22	0.34	0.33
OW-26M	0.59	0.63	0.86	0.74	1.01	0.35	0.31
OW-32D	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OW-34 ¹	0.0	0.0	0.0	<0.01	<0.01	0.79	0.76
OW-46	<0.01	0.0	0.0	0.0	0.0	<0.01	0.0
OW-65	0.0	0.01	0.38	0.01	0.42	0.57	0.48
OW-82D	0.01	0.02	0.15	0.04	0.04	0.03	0.02

1 Product thickness measurements at OW-34 are approximate.
NM Not measured.

Note: LNAPL absorbent socks were removed from the wells on 3/4/08. The absorbent socks were reinserted into Wells OW-25D, OW-26M, OW-34, OW-46, OW-65, and OW-82D on 3/30/09.

Table 8. 2008 US Gypsum Production Well Pumping Rates, Former Hyatt Clark Industries Site, Clark New Jersey.

	Average Monthly Pumping Rates (gallons per minute)											
	1/2008	2/2008	3/2008	4/2008	5/2008	6/2008	7/2008	8/2008	9/2008	10/2008	11/2008	12/2008
Well 1	305	294	282	294	198	184	213	160	129	166	112	78
Well 2	14	10	33	18	9	13	18	10	13	16	18	10
Total:	319	305	315	311	208	197	231	170	142	181	130	88

TOTAL 2008 average pumping rate (gpm):	
Well 1	
2008 average pumping rate (gpm):	201
Permit Number: 4600006	
Well depth: 505 feet	
Well 2	
2008 average pumping rate (gpm):	15
Permit Number: 2600204	
Well depth: 300 feet	

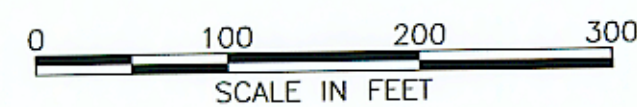
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FIGURES

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Acad Version: R17.1s (LMS Tech)
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PROJECT TITLE

FORMER HYATT CLARK INDUSTRIES, INC. SITE
CLARK, NEW JERSEY
PREPARED FOR:
GENERAL MOTORS CORPORATION

PROJECT MANAGER
J. MESSINGER

DEPARTMENT MANAGER
C. MOTTA

LEAD DESIGN PROF.
M. PENA

CHECKED BY
C. LAPRUS

SHEET TITLE

GROUNDWATER ELEVATION
CONTOUR MAP FOR OVERBURDEN
MARCH 2009

TASK/PHASE NUMBER
00002

PROJECT NUMBER
NJ000298.0027

DRAWN BY
J. GONZALEZ

DRAWING NUMBER

1



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- TOWNSHIP BOUNDARY
- FENCE
- RAILROAD TRACKS
- LIMITS OF CAP SYSTEM

OVERBURDEN WELL (RED INDICATES PUMPING WELL,
GREEN INDICATES PASSIVE RECOVERY WELL)

(43.30) WATER-LEVEL ELEVATION, FT. MSL (MARCH 2009)

GROUNDWATER ELEVATION CONTOUR (FT. MSL)
DASHED WHERE INFERRED
(CONTOUR INTERVAL: 1 FOOT)

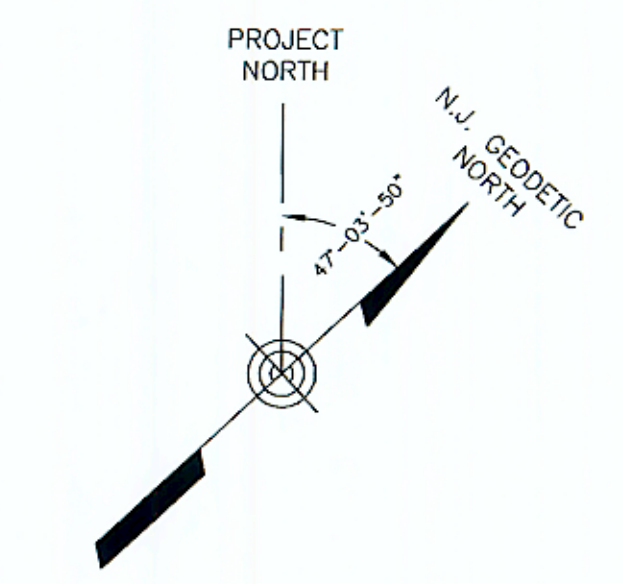
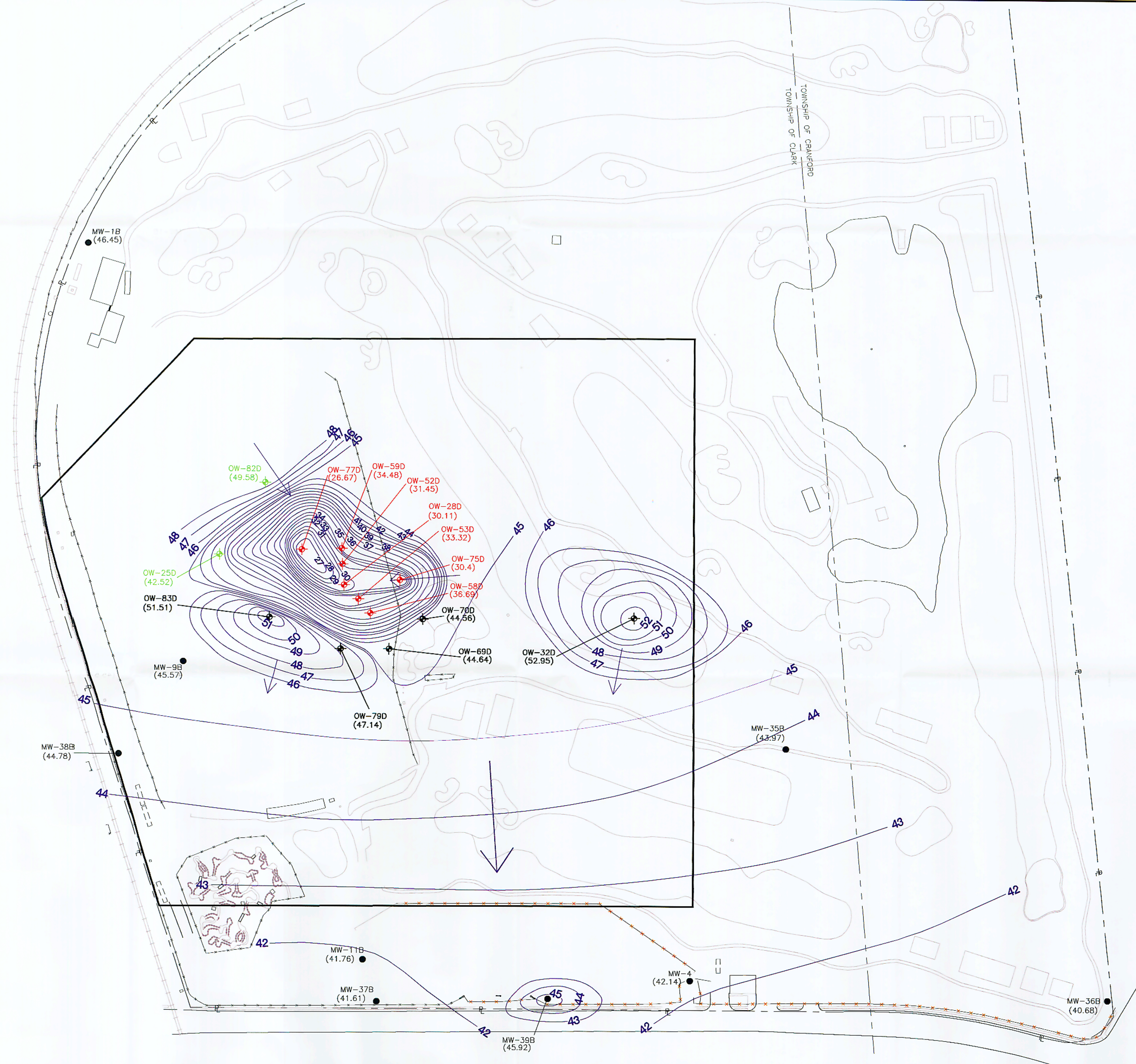
INFERRED GENERAL DIRECTION OF GROUNDWATER FLOW
NM NOT MEASURED

NOTE:

- GROUNDWATER ELEVATIONS FOR MW-14, OW-24, OW-25S
OW-26S, OW-26M, OW-65 & OW-73 ARE INCLUDED ON
THE FIGURE BUT WERE NOT USED FOR CONTOURING.

Date/Time : Mon, 29 Jun 2009 - 10:48am
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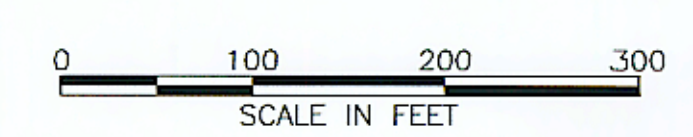
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LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- - - TOWNSHIP BOUNDARY
- x - x - FENCE
- RAILROAD TRACKS
- LIMITS OF CAP SYSTEM
- SHALLOW BEDROCK WELL (RED INDICATES PUMPING WELL, GREEN INDICATES PASSIVE RECOVERY WELL)
- (43.29) WATER-LEVEL ELEVATION, FT. MSL (MARCH 2009)
- 42 GROUNDWATER ELEVATION CONTOUR (FT. MSL)
DASHED WHERE INFERRED
(CONTOUR INTERVAL: 1 FOOT)
- INFERRED GENERAL DIRECTION OF GROUNDWATER FLOW

NOTE:
1. GROUNDWATER ELEVATIONS FOR MW-9, MW-7 AND OW-69D ARE INCLUDED ON THE FIGURE BUT WERE NOT USED FOR CONTOURING.



REV.	ISSUED DATE	DESCRIPTION
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KEYPLAN	SEAL	SEAL
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PROJECT TITLE

FORMER HYATT CLARK INDUSTRIES, INC. SITE
CLARK, NEW JERSEY
PREPARED FOR:
GENERAL MOTORS CORPORATION

PROJECT MANAGER J. MESSINGER	DEPARTMENT MANAGER C. MOTTA	LEAD DESIGN PROF. M. PENNA	CHECKED BY D. HEUER
SHEET TITLE GROUNDWATER ELEVATION CONTOUR MAP FOR SHALLOW BEDROCK MARCH 2009		TASK/PHASE NUMBER 00002	DRAWN BY J. GONZALEZ
		PROJECT NUMBER NJ000298.0027	DRAWING NUMBER 2

Date/Time : Mon, 29 Jun 2009 - 10:55am
Path/Name : G:\Drafting\GM\CONTOURS\DEEP BEDROCK_2009-03.DWG - Layout Tab : 17X11H

Acad Version : R17.1s (LUS Tech)
User Name : jgonzalez

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100 TERMINAL
AVENUE SITE

FORMER HYATT
CLARK SITE

MW-10
MW-10B

MW-10B2
MW-10B3
(41.20)

MW-87B5
(42.05)

MW-31B3
(41.13)

MW-37B2
(41.00)

MW-85B3
(41.18)

NOTE:

GROUNDWATER ELEVATION FOR
MW-87B5 IS INCLUDED ON THE FIGURE
BUT WAS NOT USED FOR CONTOURING.

0 300
SCALE IN FEET

REV. ISSUED DATE DESCRIPTION

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PROJECT TITLE

FORMER HYATT CLARK
INDUSTRIES, INC. SITE
CLARK, NEW JERSEY

PROJECT MANAGER
J. MESSINGER

DEPARTMENT MANAGER
C. MOTTA

LEAD DESIGN PROF.
E. RODRIGUEZ

CHECKED
J. MESSINGER

SHEET TITLE
**GROUNDWATER ELEVATION
CONTOURS FOR
DEEP BEDROCK
MARCH 23, 2009**

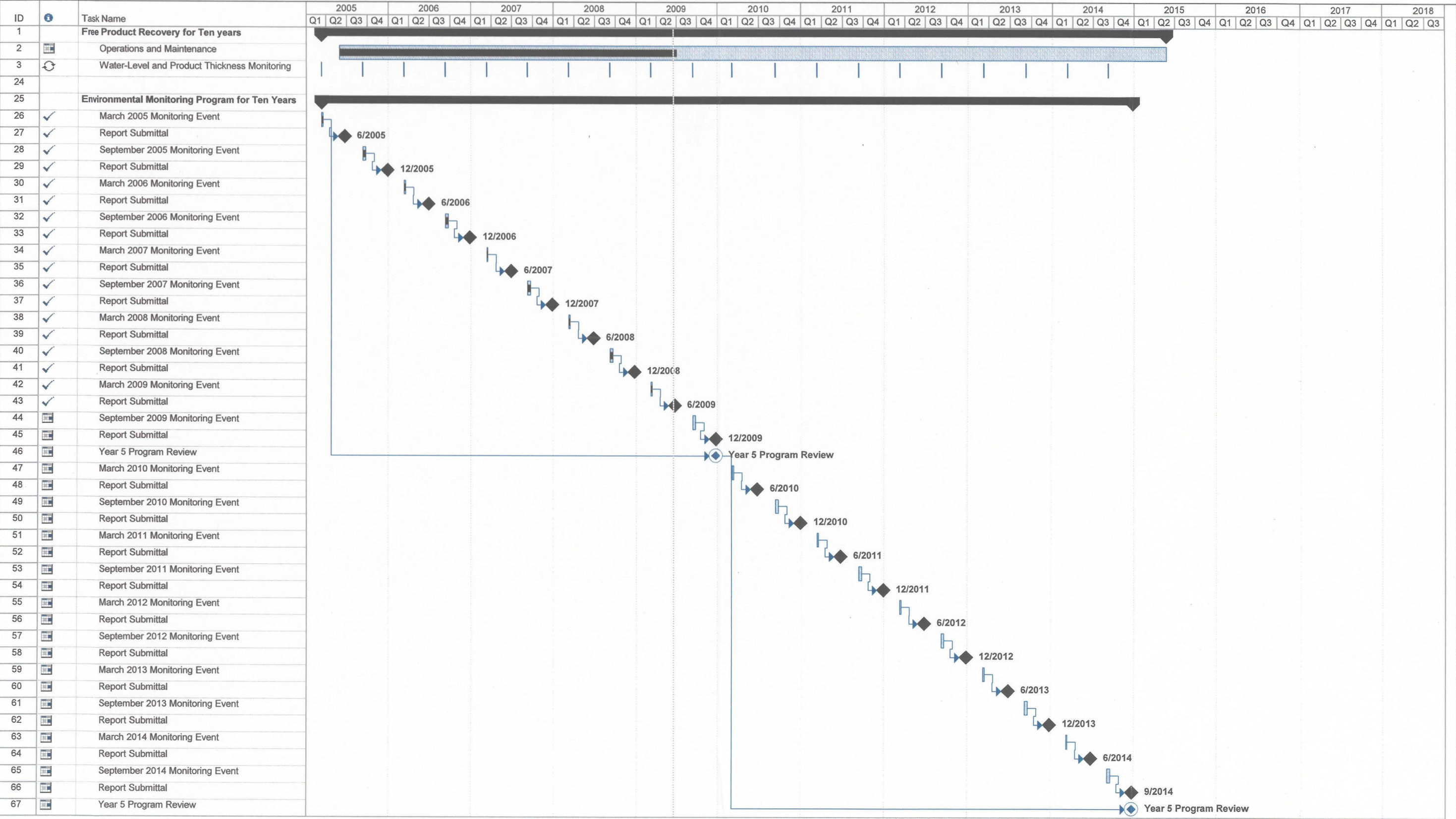
TASK/PHASE NUMBER
00002

DRAWN BY
J. GONZALEZ

PROJECT NUMBER
NJ000298.0027

FIGURE
3

Figure 4. Remediation and Monitoring Schedule, Former Hyatt Clark Industries Site, Clark, New Jersey.



Project: remediation schedule 0908 upd
Date: Wed 6/17/09

Task
Split



Progress
Milestone



Summary
Project Summary



External Tasks
External Milestone



Deadline



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APPENDIX A

GROUNDWATER SAMPLING FORMS

Groundwater Sampling Form

Well ID:	MW-15 PB
Sample ID:	MW-15PB(030309)
SSOW Ref:	R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

Purge Method: (in boldface)	Monsoon	Centrifugal	Bladder	Bailer
Volume to be Purged:	28.3			
Total Volume Purged:	29 gallons			
Pump on:	13:33	off:	16:28	

[illegible]

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final_REV.xls\MW- 15

Groundwater Sampling Form

Task:	00002
Sampled By:	C. Laprus, C. Cifelli
Recorded By:	C. Laprus, C. Cifelli
Coded Replicate No.:	None

Instrument Identification

Standard Purge

Purge Method: (in boldface) **Monsoon** Centrifugal Bladder Bailer

Volume to be Purged: 27.9

Total Volume Purged: ~20 gallons

Pump on: 12:18 off: 14:27 DRY

Pump on: 8:12 off: 8:32

Observations During Sampling

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final_REV.xls\OW-46

Groundwater Sampling Form

Task:	00002
Sampled By:	C. Cifelli, V. Myers
Recorded By:	C. Cifelli, V. Myers
Coded Replicate No.:	OW-32DPBMS(030409), OW-32DPBMS(030409)

OW-32DPBMS(030409) and DUPPB(030409)

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

Casing Material:	Stainless Steel
Casing Diameter:	4"
Total Depth:	39.08
Depth to Water:	24.9
Water Column:	14.18
Gallons/Foot:	0.6530
Gallons in Well:	9.25

Volume to be Purged:	27.77
Total Volume Purged:	28.00
Pump on: 15:23	off: 19:12

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final_REV.xls\OW-32D

Groundwater Sampling Form

Task:	00002
Sampled By:	D. Kirschner
Recorded By:	D. Kirschner
Coded Replicate No.:	None

Well ID: MW-21 LF
Sample ID: MW-21LF(030509)
SSOW Ref: R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Casing Material:	SS
Casing Diameter:	4"
Total Depth:	37.00
Depth to Water:	26.13
Water Column:	10.87
Gallons/Foot:	0.6528
Gallons in Well:	7.10

Purge Method: (in boldface) Submersible Centrifugal **Monsoon** Marshak High Pres
Pump Intake Setting 32'
Pump on: 10:10 off: 10:58

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW-21 LF

Groundwater Sampling Form

Task: 00002

Sampled By: C. Laprus

Recorded By: C. Laprus

Coded Replicate No.: None

Well ID: MW-21 PB
Sample ID: MW-21PB(030509)
SSOW Ref: R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Standard Purge

Purge Method: (in boldface)	Monsoon	Centrifugal	Bladder	Marshak	High Pres
Volume to be Purged:		21.3			
Gallons Purged:		21.5			
Pump on:	11:00	off:	13:05		

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final_REV.xls\MW-21 PB

Groundwater Sampling Form

Well ID: MW-37R LF
Sample ID: MW-37RLF(030409)
SSOW Ref: R005011

Coded Replicate No.: DUP(030409)
MW-37RLFMS(030409)
MW-37RLFMSD(030409)

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Pump on: 10:55 off: 11:37

[illegible]

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW-37R LF

Groundwater Sampling Form

Task:	00002
Sampled By:	C. Cifelli
Recorded By:	C. Cifelli
Coded Replicate No.:	None

Well ID: MW-37R PB
Sample ID: VW-37RPB(030409
SSOW Ref: R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	41.90
Depth to Water:	22.92
Water Column:	38.88
Gallons/Foot:	0.1630
Gallons in Well:	6.30

Volume to be Purged:	18.9
Gallons Purged:	19
Pump on:	11:54 off: 13:12

[illegible]

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW- 37R PB

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Groundwater Sampling Form

Project Number:	NJ000298.0027
Date:	3/4/2009
Sampling Time:	11:34
Weather:	20's, cold, sun

Task:	00002
Sampled By:	V. Myers
Recorded By:	V. Myers
Coded Replicate No.:	None

Well ID: MW-37B LF
Sample ID: MW-37BLF(030409)
SSOW Ref: R005011

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Low Flow Purge

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	80.42
Depth to Water:	29.01
Water Column:	51.41
Gallons/Foot:	0.1632
Gallons in Well:	8.38

Purge Method: (in boldface) Submersible Centrifugal **Monsoon** Marshak High Pres
Pump Intake Setting 69.4
Pump on: 11:00 off: 11:36

Field Parameter Measurements Collected During Purging

[illegible]

Observations During Sampling

Well Condition: Good

Purge Water Disposal: On-site containment

Note: Purge rates are approximate.

Groundwater Sampling Form

Task:	00002
Sampled By:	V. Myers
Recorded By:	V. Myers
Coded Replicate No.:	None

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Standard Purge

Purge Method: (in boldface)	Monsoon	Centrifugal	Bladder	Marshak	High Pres
Volume to be Purged:	<u>25.1</u>				
Gallons Purged:	<u>25.1</u>				
Pump on:	11:36	off:	14:00		

Field Parameter Measurements Collected During Purging

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW- 37B PB

Groundwater Sampling Form

Well ID: MW-37B2 LF

Sample ID: MW-37B2LF(030409)

SSOW Ref R005011

Coded Replicate No.: None

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Purge Method: (in boldface) Submersible Centrifugal Monsoon Marshak High Pres

Pump Intake Setting 198

Pump on: 11:07 off: 11:49

[illegible]

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW-37B2 LF

Groundwater Sampling Form

Task: 00002
 Sampled By: D. Kirschner, C. Laprus
 Recorded By: D. Kirschner, C. Laprus
 Coded Replicate No.: None

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Standard Purge

Purge Method: (in boldface)	Monsoon	Centrifugal	Bladder	Marshak	High Pres
Volume to be Purged:	88.5				
Gallons Purged:	89				
Pump on:	12:10	off:	13:40		

Field Parameter Measurements Collected During Purging

[illegible]

Observations During Sampling

Purge Water Disposal: On-site containment

Note: Purge rates are approximate.

Groundwater Sampling Form

Task:	00002
Sampled By:	D. Kirschner
Recorded By:	D. Kirschner
Coded Replicate No.:	None

Instrument Identification

Low Flow Purge

Purge Method: (in boldface) Submersible Centrifugal Monsoon Marshak High Pres
Pump Intake Setting 309
Pump on: 12:40 off: 13:28

Observations During Sampling

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW-37B3 LF

Groundwater Sampling Form

Task:	00002
Sampled By:	D. Kirschner
Recorded By:	D. Kirschner
Coded Replicate No.:	None

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	325.35
Depth to Water:	32.47
Water Column:	292.88
Gallons/Foot:	0.1632
Gallons in Well:	47.70

Volume to be Purged:	143.1		
Gallons Purged:	143.20		
Pump on:	15:55	off:	17:37

[illegible]

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW- 37B3 PB

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Groundwater Sampling Form

Project Number:	NJ000298.0027
Date:	3/3/2009
Sampling Time:	12:02
Weather:	20's, clear, sun

Task:	00002
Sampled By:	V. Myers
Recorded By:	V. Myers
Coded Replicate No.:	None

Well ID: MW-38 LF
Sample ID: MW-38LF(030309)
SSOW Ref: R005011

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Low Flow Purge

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	36.74
Depth to Water:	19.27
Water Column:	17.47
Gallons/Foot:	0.1632
Gallons in Well:	2.84

Purge Method: (in boldface) Submersible Centrifugal **Monsoon** Marshak High Pres
Pump Intake Setting 25
Pump on: 11:25 off: 11:07

Field Parameter Measurements Collected During Purging

[illegible]

Observations During Sampling

Well Condition: Good

Purge Water Disposal: On-site containment

Note: Purge rates are approximate.

Groundwater Sampling Form

Task:	00002
Sampled By:	V. Myers
Recorded By:	V. Myers
Coded Replicate No.:	None

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Standard Purge

Purge Method: (in boldface) **Monsoon** Centrifugal Bladder Marshak High Pres
 Volume to be Purged: 8.55
 Gallons Purged: 8.6
 Pump on: 12:10 off: 12:35

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW- 38 PB

Groundwater Sampling Form

Task:	00002
Sampled By:	V. Myers
Recorded By:	V. Myers
Coded Replicate No.:	None

Well ID: MW-38B LF
Sample ID: MW-38BLF(030309)
SSOW Ref: R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	77.63
Depth to Water:	28.81
Water Column:	48.82
Gallons/Foot:	0.1632
Gallons in Well:	7.96

Purge Method: (in boldface) Submersible Centrifugal **Monsoon** Marshak High Pres
Pump Intake Setting 69
Pump on: 13:55 off: 14:35

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

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Groundwater Sampling Form

Task: 00002

Sampled By: V. Myers

Recorded By: V. Myers

Coded Replicate No.: MW-38BPBMS(0303
DUP-PB(030309)

Sample ID: MW-38BPB(030309

SSOW Ref: R005011

Coded Replicate No.: MW-38BPBMS(030309), MW-38BPBMSD(030309),
DUP-PB(030309)

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Standard Purge

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	77.63
Depth to Water:	28.81
Water Column:	48.82
Gallons/Foot:	0.1630
Gallons in Well:	7.96

Purge Method: (in boldface) **Monsoon** Centrifugal Bladder Marshak High Pres

Volume to be Purged: 23.8

Gallons Purged	24
----------------	----

Pump on: 14:35 off: 16:25

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

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Groundwater Sampling Form

Task: 00002
 Sampled By: C. Laprus, C. Cifelli
 Recorded By: C. Laprus, C. Cifelli
 Coded Replicate No.: None

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Low Flow Purge

Purge Method: (in boldface) Submersible Centrifugal **Monsoon** Marshak High Pres
Pump Intake Setting 27
Pump on: 9:46 off: 11:31

Field Parameter Measurements Collected During Purging

[illegible]

Observations During Sampling

Purge Water Disposal: On-site containment

Note: Purge rates are approximate.

Groundwater Sampling Form

Task:	00002
Sampled By:	C. Cifelli
Recorded By:	C. Cifelli
Coded Replicate No.:	None

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Casing Material:	PVC
Casing Diameter:	2"
Total Depth:	29.00
Depth to Water:	24.37
Water Column:	4.63
Gallons/Foot:	0.1630
Gallons in Well:	0.75

Volumes to be Purged: 2.26
Gallons Purged: 2.3
Pump on: 9:46 off: 11:31

[illegible]

Purge Water Disposal: On-site containment

G:\PROJECT\GMHYATT\NJ0298.027\GWsamp0309\Semi-Annual Report\Appendix A\GWsampforms0309 Final REV.xls\MW- 39 PB

Groundwater Sampling Form

Well ID: MW-39B LF
Sample ID: MW-39BLF(030309)
SSOW Ref: R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Purge Method: (in boldface) Submersible Centrifugal **Monsoon** Marshak High Pres
Pump Intake Setting 55'
Pump on: 9:55 off: 10:49

[illegible]

Purge Water Disposal: On-site containment

Note: Purge rates are approximate.

Groundwater Sampling Form

Well ID: MW-39B
Sample ID: MW-39BPB(030309)
SSOW Ref: R005011

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	Lab Certified Horiba

Purge Method: (in boldface) **Monsoon** Centrifugal Bladder Marshak High Pres
 Volume to be Purged: 17.49
 Gallons Purged: 17.50
 Pump on: 10:50 off: 12:02

[illegible]

Purge Water Disposal: On-site containment

Note: Purge rates are approximate.

Groundwater Sampling Form

Well ID: MW-87B

Sampled By: DH/CL

Sample ID: MW-87BPB(032309)

Recorded By: DH/CL

SSOW Ref: R005011

Coded Replicate No.: none

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

FLUTe™ Multi-Port Sampling System Purge

Purge Method: Nitrogen gas pressure - water displacement evacuation

Purge Strokes: 3

Volume Purged Per Stroke: 2.5 gallons

Purge Stroke Duration: 13

Total Volume Purged: 7.5 gallons

Total Purge Duration: 1:15

Field Parameter Measurements Collected During Purging

[illegible]

Observations During Sampling

Well Condition: Good

Purge Water Disposal: On-site containment

Notes: Purge rates are approximate.

Groundwater Sampling Form

Well ID: MW-872B

Sample ID: MW-87B2PB(032309)

SSOW Ref: R005011

Coded Replicate No.: none

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

Purge Method: Nitrogen gas pressure - water displacement evacuation

Total Purge Duration: 1:15

[illegible]

Purge Water Disposal: On-site containment

Notes: Purge rates are approximate.

Groundwater Sampling Form

Project Number:	<u>NJ000298.0027</u>
Date:	<u>3/23/2009</u>
Sampling Time:	<u>13:25</u>
Weather:	<u></u>

Task:	00002
Sampled By:	DH/CL
Recorded By:	DH/CL
Coded Replicate No.:	none

Well ID: MW-87B3
Sample ID: MW-87B3PB(032309)
SSOW Ref: R005011

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

FLUTe™ Multi-Port Sampling System Purge

Purge Method: Nitrogen gas pressure - water displacement evacuation

Purge Strokes:	3
Volume Purged Per Stroke:	2.5 gallons
Purge Stroke Duration:	13
Total Volume Purged:	7.5 gallons
Total Purge Duration:	1:15

Field Parameter Measurements Collected During Purging

[illegible]

Observations During Sampling

Well Condition: Good

Purge Water Disposal: On-site containment

Notes: Purge rates are approximate.

Groundwater Sampling Form

Well ID: MW-87B4

Sample ID: MW-87B4PB(032309)

SSOW Ref: R005011

Coded Replicate No.: none

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

Purge Method: Nitrogen gas pressure - water displacement evacuation

Total Purge Duration: 1:15

[illegible]

Purge Water Disposal: On-site containment

Notes: Purge rates are approximate.

Groundwater Sampling Form

Task:	00002
Sampled By:	DH/CL
Recorded By:	DH/CL
Coded Replicate No.:	none

Instrument Identification

Water Level Meter	Water Quality Meter(s)
Solinst - 300 ft.	YSI- 600XL

Purge Method: Nitrogen gas pressure - water displacement evacuation

Purge Strokes:	<u>3</u>
Volume Purged Per Stroke:	<u>2.5 gallons</u>
Purge Stroke Duration:	<u>13</u>
Total Volume Purged:	<u>7.5 gallons</u>
Total Purge Duration:	<u>1:15</u>

[illegible]

Well Condition: Good

Purge Water Disposal: On-site containment

Notes: Purge rates are approximate.
NM - Not Measured

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APPENDIX B

ANALYTICAL DATA QA/QC EVALUATION



**CONESTOGA-ROVERS
& ASSOCIATES**

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MEMORANDUM

TO: Eric Rodriguez [Eric.Rodriguez@arcadis-us.com]

REF. NO.: 012650-005011

FROM: Paul McMahon/adh/3 *PM*

DATE: May 8, 2009

Sent via email

RE: Data Quality Assessment and Validation
Semiannual Groundwater Investigation
Former Hyatt Clark Industries Site
Clark, New Jersey
March 2009

The following details a quality assessment and validation of the analytical data resulting from the collection of 26 groundwater and 13 quality control (QC) samples from the Former Hyatt Clark Industries Site in Clark, New Jersey, from March 3 to March 23, 2009. The sample summary detailing sample identification, sample location, QC samples, and analytical parameters is presented in Table 1. Sample analysis was completed at TestAmerica Laboratories in Edison, New Jersey (TA) in accordance with the methodologies presented in Table 2. The QC criteria used to assess the data were established by the methods and following documents:

- i) "Standard Operating Procedures for the Quality Assurance Data Validation of Analytical Deliverables - TCL - Organics," Standard Operating Procedures (SOP) BEMQA 5.A.13, October 2001; and
- ii) "Standard Operating Procedures for Analytical Data Validation of Target Analyte List (TAL) - Inorganics," SOP 5.A.2, October 2001.

New Jersey reduced data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results and supporting quality assurance/quality control (QA/QC) provided.

Holding Time Period and Sample Analysis

The holding time periods are presented in the analytical methods. All samples were prepared and analyzed within the method-required holding times. All samples were properly preserved and cooled after collection.

Gas Chromatography/Mass Spectrometer (GC/MS) Mass Calibration

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, Methods 624 and 625 require the analysis of the tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra

must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated daily throughout sample analysis to ensure the continued optimization of the instrument.

Instrument tuning data were reviewed. The tuning compounds were analyzed at the required frequency throughout the volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis periods. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

Initial Calibration - Organic Analyses, GC/MS

To quantify compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a minimum of a three-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range.

Calibration data were reviewed for all samples. Initial calibration standards were analyzed as required, and the data showed acceptable sensitivity and linearity.

Initial Calibration - Organics, GC

To quantify compounds of interest, calibration of the GC over a specific concentration range must be performed. Initially, a minimum of a three-point calibration curve is analyzed for Aroclors 1016 and 1260, while the other Aroclors are calibrated using one point.

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify all compounds of interest in subsequent analyses.

Calibration data were reviewed for all samples. Initial calibration standards were analyzed as required, and the data showed acceptable linearity.

Initial Calibration - Inorganic Analyses

An initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves within a laboratory specific percent recovery of the accepted or true value.

A review of the data showed that all ICVs were analyzed at the proper frequency and were within the acceptance criteria.

Continuing Calibration - Organics, GC/MS

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve daily.

Calibration standards were analyzed at the required frequency, and most results showed acceptable instrument sensitivity and linearity of response. High benzidine percent differences were reported, and the associated sample results were qualified as estimated (see Table 3).

Continuing Calibration - Organics, GC

To ensure that the calibration of the instrument is valid throughout the sample analysis period, continuing calibration standards are analyzed and evaluated on a regular basis. To evaluate the continued linearity of the calibration, percent difference (%D) values are calculated for each compound in all continuing standards.

Continuing calibration standards were analyzed at the required frequency. The results showed acceptable linearity of response.

Continuing Calibration - Inorganics

Continuing calibration criteria for inorganic analyses were the same criteria as used for assessing the initial calibration data. The continuing calibration verification data were within the acceptance criteria.

Laboratory Blank Samples

Laboratory blanks are prepared and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the laboratory procedures.

For this study, laboratory blanks were analyzed at a minimum frequency of one per analytical batch. Most blank results were non-detect for the analytes of interest. Thallium and selenium were detected, but the associated sample results were non-detect and were not impacted.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

In accordance with the methods employed, all samples, blanks, and standards analyzed for VOCs, SVOCs, and polychlorinated biphenyls (PCBs) are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of individual sample matrices on analytical efficiency and are assessed against laboratory control limits.

All surrogate recoveries for the investigative samples were acceptable.

Blank Spike (BS)/Laboratory Control Sample (LCS) Analysis

The BS or LCS serves as a measure of overall analytical performance. BS or LCS are prepared with all analytes of interest and analyzed with each sample batch.

BS/LCS were prepared and analyzed for all parameters. All recoveries were within the laboratory specified control limits for all analytes of interest demonstrating acceptable overall analytical accuracy.

Matrix Spike (MS) and Matrix Spike/Duplicate (MS/Dup) Analyses

MS or MS/Dup samples are prepared and analyzed with the samples for PCBs, VOCs, SVOCs, and metals. The recoveries of spike analyses are used to assess the analytical accuracy achieved on individual sample matrices. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. The relative percent difference (RPD) between the laboratory duplicate sample is used to assess analytical precision.

MS or MS/Dup analyses were performed as shown in Table 1. Most recoveries and RPDs were within laboratory control limits, demonstrating acceptable overall analytical accuracy and precision. One high PCB recovery was reported, but the associated sample result was non-detect and was not impacted. Zero percent MS recoveries were reported for 2-chlorovinyl ethyl ether. The associated sample results were non-detect, and were rejected based on the poor analytical efficiency (see Table 4).

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

To verify that the laboratory has established proper inter-element and background correction factors, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed each sample analysis period.

ICS analysis results were evaluated for all samples. All ICS recoveries were within the established control limits of 80 to 120 percent.

Serial Dilution - Inorganic Analyses

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per twenty investigative samples is analyzed at a five-fold dilution. For samples with sufficient analyte concentrations, the serial dilution results must agree within 10 percent of the original results.

All serial dilution results were acceptable.

Internal Standard (IS) Summaries

To correct for changes in GC/MS response and sensitivity, IS compounds are added to investigative samples and QC samples prior to VOC and SVOC analyses. All results are calculated as a ratio of the IS response. The criteria by which the IS results are assessed are as follows:

- i) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard; and
- ii) the retention time of the IS must not vary more than ± 30 seconds from the associated calibration standard.

All sample IS results met the above criteria and were correctly used to calculate sample results.

Compound Quantitation - Organics

The reported quantitation results and detection limits were checked to ensure results reported were accurate. The samples identified in Table 1 were reviewed. No discrepancies were found between the raw data and the sample results reported by the laboratory.

Tentatively Identified Compounds (TICs) - VOCs

A summary of the reported TICs for the sample analyses is presented in Table 5.

Field QA/QC

The field QA/QC consisted of three field duplicate samples, five field blanks, and five trip blanks.

Trip Blanks – VOCs

Trip blanks are transported, stored, and analyzed with the investigative samples to identify potential cross-contamination of VOCs. Trip blanks were submitted at the proper frequency, and all results were non-detect for the analytes of interest.

Field Duplicates

Three samples were collected in duplicate as summarized in Table 1 and submitted to the laboratory for analysis. All sample results showed acceptable sampling and analytical precision.

Field Blanks

Five field blank samples were submitted for analysis, as indicated in Table 1. All blank results were non-detect for the analytes of interest.

Overall Assessment

All non-detect 2-chlorovinyl ethyl ether sample results were rejected due to poor matrix spike recoveries. The remaining data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used as reported.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
SEMIANNUAL GROUNDWATER INVESTIGATION
FORMER HYATT CLARK INDUSTRIES SITE
CLARK, NEW JERSEY
MARCH 2009

Sample ID	Location ID	Collection Date (mm/dd/yy)	Collection Time (hr:min)	Analysis/Parameters					Comments
				VOCs	Total Metals	Dissolved Metals	SVOCs	PCBs	
MW-39LF(030309)	MW-39	3/3/2009	10:43					X	
MW-39PB(030309)	MW-39	3/3/2009	11:30	X				X	
MW-39BLF(030309)	MW-39B	3/3/2009	10:46					X	
MW-39BPF(030309)	MW-39B	3/3/2009	12:01	X				X	
MW-38LF(030309)	MW-38	3/3/2009	12:02					X	
MW-38PB(030309)	MW-38	3/3/2009	12:27	X				X	
MW-38BLF(030309)	MW-38B	3/3/2009	14:32					X	
MW-38BPF(030309)	MW-38B	3/3/2009	16:25	X				X	
DUPPB(030309)	MW-38B	3/3/2009	16:25	X				X	MS/MSD Duplicate of MW-38BPF(030309)
FBLF(030309)	-	3/3/2009	14:00		X			X	Field Blank
FBBP(030309)	-	3/3/2009	0:00	X				X	Field Blank
TB(030309)	-	3/3/2009	16:27	X	X			X	Trip Blank
MW-15PB(030309)	MW-15	3/3/2009	11:34					X	
MW-37RLF(030409)	MW-37R	3/4/2009	11:34					X	MS/MSD Duplicate of MW-37RLF(030409)
DUPLF(030409)	MW-37R	3/4/2009	11:34					X	
MW-37BLF(030409)	MW-37B	3/4/2009	11:34		X			X	
MW-37BPF(030409)	MW-37B	3/4/2009	13:58	X				X	
MW-37B2LF(030409)	MW-37B2	3/4/2009	11:44					X	
MW-37B2PB(030409)	MW-37B2	3/4/2009	13:38	X				X	
MW-37B3LF(030409)	MW-37B3	3/4/2009	13:32					X	
MW-37B3PB(030409)	MW-37B3	3/4/2009	17:30	X				X	
OW-32DPB(030409)	OW-32D	3/4/2009	18:00	X	X	X	X	X	MS/MSD/Duplicate Duplicate of OW-32DPB(030409)
DUPPB(030409)	OW-32D	3/4/2009	18:00	X	X	X	X	X	Field Blank
FB(030409)	-	3/4/2009	10:00	X	X			X	Trip Blank
TB(030409)	-	3/4/2009	0:00	X				X	

TABLE 1
SAMPLE COLLECTION AND ANALYSIS SUMMARY
SEMIANNUAL GROUNDWATER INVESTIGATION
FORMER HYATT CLARK INDUSTRIES SITE
CLARK, NEW JERSEY
MARCH 2009

Sample ID	Location ID	Collection Date (mm/dd/yy)	Collection Time (hr:min)	Analysis/Parameters					Comments
				VOCs	Total Metals	Dissolved Metals	SVOCs	PCBs	
MW-37RPB(030409)	MW-37R	3/4/2009	13:10	X				X	
MW-21LF(030509)	MW-21	3/5/2009	10:53					X	
MW-21PB(030509)	MW-21	3/5/2009	12:58	X				X	
OW-46PB(030609)	OW-46	3/6/2009	8:31	X	X	X	X	X	
FB(030509)	-	3/5/2009	16:00	X				X	Field Blank
FB(030609)	-	3/6/2009	14:00	X	X		X	X	Field Blank
TB(030509)	-	3/5/2009	0:00	X					Trip Blank
TB(030609)	-	3/6/2009	0:00	X					Trip Blank
MW-87B	MW-87B	3/23/2009	13:15	X					
MW-87B2PB(032309)	MW-87B2	3/23/2009	13:20	X					
MW-87B3PB(032309)	MW-87B3	3/23/2009	13:25	X					
MW-87B4PB(032309)	MW-87B4	3/23/2009	13:30	X					
MW-87B5PB(032309)	MW-87B5	3/23/2009	13:35	X					
TB(032309)	-	3/23/2009	0:00	X					Trip Blank

Notes:
- Not applicable.
MS Matrix Spike.
MSD Matrix Spike Duplicate.
PCBs Polychlorinated Biphenyls.
VOCs Volatile Organic Compounds.
SVOCs Semi-volatile Organic Compounds.

TABLE 2

SAMPLE HOLDING TIMES CRITERIA AND ANALYTICAL METHODS SUMMARY
SEMIANNUAL GROUNDWATER INVESTIGATION
FORMER HYATT CLARK INDUSTRIES SITE
CLARK, NEW JERSEY
MARCH 2009

Parameter	Matrix	Analytical Method	Collection to Extraction	Extraction to Analysis	Collection to Analysis
Total and Dissolved Metals	Water	200.7 ⁽¹⁾	-	-	180 Days
Total and Dissolved Mercury	Water	245.1 ⁽¹⁾	-	-	28 Days
VOCs	Water	624 ⁽²⁾	-	-	14 Days
SVOCs	Water	625 ⁽²⁾	7 Days	40 Days	-
PCBs	Water	608 ⁽²⁾	7 Days	40 Days	-

Notes:

- ⁽¹⁾ Referenced from "Methods for the Chemical Analysis of Water and Wastes," (MCAWW), EPA-600/4-79-020, March 1983 and subsequent revisions.
- ⁽²⁾ "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater," EPA-600/4-82-057, July 1982 and subsequent revisions.
- PCBs Polychlorinated Biphenyls.
- VOCs Volatile Organic Compounds.
- SVOCs Semi-volatile Organic Compounds.

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO OULYING CONTINUING CALIBRATION RESULTS
 SEMI-ANNUAL GROUNDWATER INVESTIGATION
 FORMER HYATT CLARK INDUSTRIES SITE
 CLARK, NEW JERSEY
 MARCH 2009

Parameter	Compound	Calibration Dates	% D	Associated Sample ID	Sample Results	Units	Qualifier
SVOCs	Benzidine	03/16/09	36	OW-46PB_030609	7.4 U	µg/L	UJ
SVOCs	Benzidine	03/18/09	35	DUPPB_030409 MW-15PB_030309 OW-32DPB_030409	8.0 U 7.6 U 8.0 U	µg/L µg/L µg/L	UJ UJ UJ

Notes:

% D Percent Difference.

SVOCs Semi-volatile Organic Compounds.

UJ Not Detected, Estimated Reporting Limit.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE RECOVERIES
 SEMIANNUAL GROUNDWATER INVESTIGATION
 FORMER HYATT CLARK INDUSTRIES SITE
 CLARK, NEW JERSEY
 MARCH 2009

Parameter	Analyte	Spike Sample ID	MS Recovery (percent)	Control Limits Recovery (percent)	Associated Samples	Sample Result	Units	Qualifier
VOCs	2-Chloroethyl vinyl ether	Various	0	10-305	All Samples	U	µg/L	R

Notes:

MS Matrix Spike.

R Rejected.

U Not Detected.

VOCs Volatile Organic Compounds.

TABLE 5
ANALYTICAL RESULTS SUMMARY - TICs
SEMIANNUAL GROUNDWATER INVESTIGATION
FORMER HYATT CLARK INDUSTRIES SITE
CLARK, NEW JERSEY
MARCH 2009

<i>Sample Location:</i>		<i>MW-37B2</i>	<i>MW-38B</i>
<i>Sample ID:</i>		<i>MW-37B2PB_030409</i>	<i>DUPPB_030309</i>
<i>Sample Date:</i>		<i>03/04/09</i>	<i>03/03/09</i>
<i>Parameter</i>	<i>Units</i>		
<i>Volatiles</i>			
Methyl Tert Butyl Ether	µg/L	7.8 NJ	-
Unknown	µg/L	-	4.4 J

Notes:

- Not Detected.

J Estimated.

N Tentative Identification.

TICs Tentatively Identified Compounds.

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APPENDIX C

**ANALYTICAL DATA TABLES AND ELECTRONIC
DELIVERABLES (HAZSITE FORMAT)**

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	MW-15 03/03/09 MW-15PB_030309	MW-21 03/05/09 MW-21PB_030509	MW-37B 03/04/09 MW-37BPB_030409	MW-37B2 03/04/09 MW-37B2PB_030409
1,1,1-Trichloroethane	30		<0.40	7.6	0.70	0.60
1,1,2,2-Tetrachloroethane	1		<0.40	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.20	<0.20	<0.20	0.40
1,1-Dichloroethane	50		9.2	6.0	<0.30	13
1,1-Dichloroethene	1		0.60	4.4	9.9	44
1,2-Dichloroethane	2		1.0	<0.30	<0.30	<0.30
1,2-Dichloropropane	1		<0.50	<0.50	<0.50	<0.50
2-Chloroethylvinylether	--		R	R	R	R
Acrolein	5		<6.6	<6.6	<6.6	<6.6
Acrylonitrile	2		<3.1	<3.1	<3.1	<3.1
Benzene	1		<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	1		<0.20	<0.20	<0.20	<0.20
Bromoform	4		<0.20	<0.20	<0.20	<0.20
Bromomethane	10		<0.40	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.30	<0.30	1.7	1.7
Chlorobenzene	50		<0.20	<0.20	<0.20	<0.20
Chloroethane	--		21	<0.40	<0.40	<0.40
Chloroform	70		<0.20	<0.20	1.5	2.0
Chloromethane	--		<0.40	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		<0.30	4.1	<0.30	11
cis-1,3-Dichloropropene	--		<0.10	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.30	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.40	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.40	<0.40	<0.40	<0.40
Tetrachloroethene	1		<0.40	11	<0.40	55
Toluene	600		<0.30	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		<0.40	0.40	<0.40	<0.40
trans-1,3-Dichloropropene	--		<0.20	<0.20	<0.20	<0.20
Trichloroethene	1		<0.40	2.9	16	130
Trichlorofluoromethane	2,000		<0.40	<0.40	<0.40	3.4
Vinyl Chloride	1		<0.20	0.50	<0.20	<0.20
Xylenes (total)	1,000		0.40	<0.40	<0.40	<0.40
TOTAL VOCs	--		32.20	36.90	29.80	261.10

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	MW-37B3 03/04/09 MW-37B3PB_030409	MW-37R 03/04/09 MW-37RBP_030409	MW-38 03/03/09 MW-38BPB_030309	MW-38B 03/03/09 MW-38BPB_030309
1,1,1-Trichloroethane	30		<0.80	<0.40	2.1	1.6
1,1,2,2-Tetrachloroethane	1		<0.70	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.40	<0.20	<0.20	<0.20
1,1-Dichloroethane	50		12	<0.30	2.1	<u>56</u>
1,1-Dichloroethene	1		<u>31</u>	<0.50	<0.50	<u>53</u>
1,2-Dichloroethane	2		<0.50	<0.30	<0.30	1.4
1,2-Dichloropropane	1		<1.0	<0.50	<0.50	<0.50
2-Chloroethylvinylether	--		R	R	R	R
Acrolein	5		<13	<6.6	<6.6	<6.6
Acrylonitrile	2		<6.2	<3.1	<3.1	<3.1
Benzene	1		<0.50	<0.20	<0.20	<0.20
Bromodichloromethane	1		<0.50	<0.20	<0.20	<0.20
Bromoform	4		<0.40	<0.20	<0.20	<0.20
Bromomethane	10		<0.90	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.70	<0.30	<0.30	<0.30
Chlorobenzene	50		<0.50	<0.20	<0.20	<0.20
Chloroethane	--		<0.90	<0.40	<0.40	<0.40
Chloroform	70		1.6	<0.20	<0.20	<0.20
Chloromethane	--		<0.90	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		13	<0.30	4.0	<u>85</u>
cis-1,3-Dichloropropene	--		<0.30	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.50	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.80	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.80	<0.40	<0.40	<0.40
Tetrachloroethene	1		<u>39</u>	<0.40	<u>20</u>	<u>38</u>
Toluene	600		<0.60	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.30	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		<0.80	<0.40	<0.40	2.2
trans-1,3-Dichloropropene	--		<0.30	<0.20	<0.20	<0.20
Trichloroethene	1		<u>190</u>	<u>4.1</u>	<u>7.7</u>	<u>18</u>
Trichlorofluoromethane	2,000		5.8	<0.40	<0.40	<0.40
Vinyl Chloride	1		<0.50	<0.20	<0.20	<u>23</u>
Xylenes (total)	1,000		<0.80	<0.40	<0.40	<0.40
TOTAL VOCs	--		292.40	4.10	35.90	278.20

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	MW-38B 03/03/09 DUPPB_030309	MW-39 03/03/09 MW-39PB_030309	MW-39B 03/03/09 MW-39BPB_030309	MW-87B 03/23/09 MW-87BPB_032309
1,1,1-Trichloroethane	30		1.8	<0.40	<0.40	<0.40
1,1,2,2-Tetrachloroethane	1		<0.40	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	50		<u>54</u>	<0.30	<0.30	<0.30
1,1-Dichloroethene	1		<u>52</u>	<0.50	<0.50	<0.50
1,2-Dichloroethane	2		1.3	<0.30	<0.30	<0.30
1,2-Dichloropropane	1		<0.50	<0.50	<0.50	<0.50
2-Chloroethylvinylether	--		R	R	R	R
Acrolein	5		<6.6	<6.6	<6.6	<6.6
Acrylonitrile	2		<3.1	<3.1	<3.1	<3.1
Benzene	1		<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	1		<0.20	<0.20	<0.20	<0.20
Bromoform	4		<0.20	<0.20	<0.20	<0.20
Bromomethane	10		<0.40	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.30	<0.30	<0.30	<0.30
Chlorobenzene	50		<0.20	<0.20	<0.20	<0.20
Chloroethane	--		<0.40	<0.40	<0.40	<0.40
Chloroform	70		<0.20	<0.20	<0.20	<0.20
Chloromethane	--		<0.40	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		<u>81</u>	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene	--		<0.10	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.30	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.40	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.40	<0.40	<0.40	<0.40
Tetrachloroethene	1		<u>31</u>	<0.40	<0.40	<0.40
Toluene	600		<0.30	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		2.2	<0.40	<0.40	<0.40
trans-1,3-Dichloropropene	--		<0.20	<0.20	<0.20	<0.20
Trichloroethene	1		<u>18</u>	<u>3.9</u>	<u>5.2</u>	<0.40
Trichlorofluoromethane	2,000		<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	1		<u>23</u>	<0.20	<0.20	<0.20
Xylenes (total)	1,000		<0.40	<0.40	<0.40	<0.40
TOTAL VOCs	---		264.30	3.90	5.20	0.00

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	MW-87B2 03/23/09 MW-87B2PB_032309	MW-87B3 03/23/09 MW-87B3PB_032309	MW-87B4 03/23/09 MW-87B4PB_032309	MW-87B5 03/23/09 MW-87B5PB_032309
1,1,1-Trichloroethane	30		<0.40	<0.40	<0.40	<0.40
1,1,2,2-Tetrachloroethane	1		<0.40	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	50		2.4	2.6	3.6	2.8
1,1-Dichloroethene	1		13	9.9	7.0	7.2
1,2-Dichloroethane	2		<0.30	<0.30	<0.30	<0.30
1,2-Dichloropropane	1		<0.50	<0.50	<0.50	<0.50
2-Chloroethyvinylether	--		R	R	R	R
Acrolein	5		<6.6	<6.6	<6.6	<6.6
Acrylonitrile	2		<3.1	<3.1	<3.1	<3.1
Benzene	1		0.20	<0.20	<0.20	<0.20
Bromodichloromethane	1		<0.20	<0.20	<0.20	<0.20
Bromoform	4		<0.20	<0.20	<0.20	<0.20
Bromomethane	10		<0.40	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.30	<0.30	<0.30	<0.30
Chlorobenzene	50		<0.20	<0.20	<0.20	<0.20
Chloroethane	--		<0.40	<0.40	<0.40	<0.40
Chloroform	70		1.2	1.0	0.80	0.80
Chloromethane	--		<0.40	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		4.8	6.2	6.2	6.2
cis-1,3-Dichloropropene	--		<0.10	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.30	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.40	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.40	<0.40	<0.40	<0.40
Tetrachloroethene	1		61	17	6.7	5.6
Toluene	600		<0.30	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		<0.40	<0.40	<0.40	<0.40
trans-1,3-Dichloropropene	--		<0.20	<0.20	<0.20	<0.20
Trichloroethene	1		260	210	180	190
Trichlorofluoromethane	2,000		6.5	32	28	30
Vinyl Chloride	1		<0.20	<0.20	<0.20	<0.20
Xylenes (total)	1,000		<0.40	<0.40	<0.40	<0.40
TOTAL VOCs	--		349.10	278.70	232.30	242.60

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	OW-32D 03/04/09 OW-32DPB_030409	OW-32D 03/04/09 DUPPB_030409	OW-46 03/06/09 OW-46PB_030609	FIELD BLANK 03/03/09 FBPB_030309
1,1,1-Trichloroethane	30		<0.40	<0.40	1.0	<0.40
1,1,2,2-Tetrachloroethane	1		<0.40	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	50		<0.30	<0.30	2.0	<0.30
1,1-Dichloroethene	1		<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	2		<0.30	<0.30	<0.30	<0.30
1,2-Dichloropropane	1		<0.50	<0.50	<0.50	<0.50
2-Chloroethylvinylether	--		R	R		
Acrolein	5		<6.6	<6.6	<6.6	<6.6
Acrylonitrile	2		<3.1	<3.1	<3.1	<3.1
Benzene	1		<0.20	<0.20	1.1	<0.20
Bromodichloromethane	1		<0.20	<0.20	<0.20	<0.20
Bromoform	4		<0.20	<0.20	<0.20	<0.20
Bromomethane	10		<0.40	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.30	<0.30	<0.30	<0.30
Chlorobenzene	50		<0.20	<0.20	<0.20	<0.20
Chloroethane	--		<0.40	<0.40	87	<0.40
Chloroform	70		<0.20	<0.20	<0.20	<0.20
Chloromethane	--		<0.40	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		<0.30	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene	--		<0.10	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.30	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.40	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.40	<0.40	<0.40	<0.40
Tetrachloroethene	1		<0.40	<0.40	<0.40	<0.40
Toluene	600		<0.30	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		<0.40	<0.40	<0.40	<0.40
trans-1,3-Dichloropropene	--		<0.20	<0.20	<0.20	<0.20
Trichloroethene	1		<0.40	<0.40	<0.40	<0.40
Trichlorofluoromethane	2,000		<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	1		<0.20	<0.20	<0.20	<0.20
Xylenes (total)	1,000		<0.40	<0.40	0.50	<0.40
TOTAL VOCs	--		0.00	0.00	91.60	0.00

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Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	FIELD_BLANK 03/04/09 FB_030409	FIELD_BLANK 03/05/09 FB_030509	FIELD_BLANK 03/06/09 FB_030609	TRIP_BLANK 03/03/09 TB_030309
1,1,1-Trichloroethane	30		<0.40	<0.40	<0.40	<0.40
1,1,2,2-Tetrachloroethane	1		<0.40	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	50		<0.30	<0.30	<0.30	<0.30
1,1-Dichloroethene	1		<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	2		<0.30	<0.30	<0.30	<0.30
1,2-Dichloropropane	1		<0.50	<0.50	<0.50	<0.50
2-Chloroethylvinylether	--		<0.20	<0.20	<0.20	<0.20
Acrolein	5		<6.6	<6.6	<6.6	<6.6
Acrylonitrile	2		<3.1	<3.1	<3.1	<3.1
Benzene	1		<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	1		<0.20	<0.20	<0.20	<0.20
Bromoform	4		<0.20	<0.20	<0.20	<0.20
Bromomethane	10		<0.40	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.30	<0.30	<0.30	<0.30
Chlorobenzene	50		<0.20	<0.20	<0.20	<0.20
Chloroethane	--		<0.40	<0.40	<0.40	<0.40
Chloroform	70		<0.20	<0.20	<0.20	<0.20
Chloromethane	--		<0.40	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		<0.30	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene	--		<0.10	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.30	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.40	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.40	<0.40	<0.40	<0.40
Tetrachloroethene	1		<0.40	<0.40	<0.40	<0.40
Toluene	600		<0.30	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		<0.40	<0.40	<0.40	<0.40
trans-1,3-Dichloropropene	--		<0.20	<0.20	<0.20	<0.20
Trichloroethene	1		<0.40	<0.40	<0.40	<0.40
Trichlorofluoromethane	2,000		<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	1		<0.20	<0.20	<0.20	<0.20
Xylenes (total)	1,000		<0.40	<0.40	<0.40	<0.40
TOTAL VOCs	--		0.00	0.00	0.00	0.00

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	TRIP_BLANK 03/04/09 TB_030409	TRIP_BLANK 03/05/09 TB_030509	TRIP_BLANK 03/06/09 TB_030609	TRIP_BLANK 03/23/09 TB_032309
1,1,1-Trichloroethane	30		<0.40	<0.40	<0.40	<0.40
1,1,2,2-Tetrachloroethane	1		<0.40	<0.40	<0.40	<0.40
1,1,2-Trichloroethane	3		<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	50		<0.30	<0.30	<0.30	<0.30
1,1-Dichloroethene	1		<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	2		<0.30	<0.30	<0.30	<0.30
1,2-Dichloropropane	1		<0.50	<0.50	<0.50	<0.50
2-Chloroethylvinylether	--		<0.20	<0.20	<0.20	<0.20
Acrolein	5		<6.6	<6.6	<6.6	<6.6
Acrylonitrile	2		<3.1	<3.1	<3.1	<3.1
Benzene	1		<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	1		<0.20	<0.20	<0.20	<0.20
Bromoform	4		<0.20	<0.20	<0.20	<0.20
Bromomethane	10		<0.40	<0.40	<0.40	<0.40
Carbon Tetrachloride	1		<0.30	<0.30	<0.30	<0.30
Chlorobenzene	50		<0.20	<0.20	<0.20	<0.20
Chloroethane	--		<0.40	<0.40	<0.40	<0.40
Chloroform	70		<0.20	<0.20	<0.20	<0.20
Chloromethane	--		<0.40	<0.40	<0.40	<0.40
cis-1,2-Dichloroethene	70		<0.30	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene	--		<0.10	<0.10	<0.10	<0.10
Dibromochloromethane	1		<0.30	<0.30	<0.30	<0.30
Ethylbenzene	700		<0.40	<0.40	<0.40	<0.40
Methylene Chloride	3		<0.40	<0.40	<0.40	<0.40
Tetrachloroethene	1		<0.40	<0.40	<0.40	<0.40
Toluene	600		<0.30	<0.30	<0.30	<0.30
Total 1,3-Dichloropropene	1		<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	100		<0.40	<0.40	<0.40	<0.40
trans-1,3-Dichloropropene	--		<0.20	<0.20	<0.20	<0.20
Trichloroethene	1		<0.40	<0.40	<0.40	<0.40
Trichlorofluoromethane	2,000		<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	1		<0.20	<0.20	<0.20	<0.20
Xylenes (total)	1,000		<0.40	<0.40	<0.40	<0.40
TOTAL VOCs	--		0.00	0.00	0.00	0.00

Table 1. Summary of Volatile Organic Compounds Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

All units are in micrograms per liter (ug/L)
< Constituent not detected above the method detection limit.
J Indicates an estimated value.
R Rejected.

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Table 2. Summary of Semi-Volatile Organic Compounds Detected in Groundwater Samples, March 2009, Former Hyatt Clark Industries Site, Clark, New Jersey.

Constituent (ug/L)	NJDEP	Location ID:	MW-15	OW-32D	OW-32D
	Groundwater Standards	Date Collected: Sample Name:	03/03/09 MW-15PB_030309	03/04/09 OW-32DPB_030409	03/04/09 DUPPB_030409
1,2,4-Trichlorobenzene	9		<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600		<1.1	<1.2	<1.2
1,3-Dichlorobenzene	600		<1.0	<1.1	<1.1
1,4-Dichlorobenzene	75		<1.0	<1.0	<1.0
2,2'-oxybis(1-Chloropropane)	300		<0.90	<0.90	<0.90
2,4,6-Trichlorophenol	20		<2.3	<2.4	<2.4
2,4-Dichlorophenol	20		<1.5	<1.6	<1.6
2,4-Dimethylphenol	100		<2.1	<2.2	<2.2
2,4-Dinitrophenol	40		<0.90	<1.0	<1.0
2,4-Dinitrotoluene	--		<1.2	<1.3	<1.3
2,6-Dinitrotoluene	--		<1.3	<1.4	<1.4
2-Chloronaphthalene	600		<1.1	<1.2	<1.2
2-Chlorophenol	40		<1.1	<1.2	<1.2
2-Nitrophenol	--		<1.6	<1.7	<1.7
3,3'-Dichlorobenzidine	30		<5.2	<5.5	<5.5
4,6-Dinitro-2-methylphenol	--		<1.3	<1.4	<1.4
4-Bromophenyl-phenylether	--		<1.3	<1.3	<1.3
4-Chloro-3-Methylphenol	--		<1.7	<1.8	<1.8
4-Chlorophenyl-phenylether	--		<1.1	<1.2	<1.2
4-Nitrophenol	--		<0.90	<1.0	<1.0
Acenaphthene	400		<0.10	<0.10	<0.10
Acenaphthylene	--		<0.10	<0.10	<0.10
Anthracene	2,000		<0.10	<0.10	<0.10
Benidine	20		<7.6 J	<8.0 J	<8.0 J
Benzo(a)anthracene	0.1		<0.053	<0.056	<0.056
Benzo(a)pyrene	0.1		<0.063	<0.067	<0.067
Benzo(b)fluoranthene	0.2		<0.10	<0.10	<0.10
Benzo(g,h,i)perylene	--		<0.095	<0.10	<0.10
Benzo(k)fluoranthene	0.5		<0.095	<0.10	<0.10
bis(2-Chloroethoxy)methane	--		<0.90	<1.0	<1.0
bis(2-Chloroethyl)ether	7		<0.90	<1.0	<1.0
bis(2-Ethylhexyl)phthalate	3		<1.1	<1.2	<1.2
Butylbenzylphthalate	100		<1.1	<1.2	<1.2
Chrysene	5		<0.20	<0.20	<0.20
Dibenzo(a,h)anthracene	0.3		<0.10	<0.10	<0.10
Diethylphthalate	6,000		<0.80	<0.90	<0.90
Dimethylphthalate	--		<1.1	<1.2	<1.2
Di-n-Butylphthalate	700		<1.1	<1.1	<1.1
Di-n-Octylphthalate	100		<1.0	<1.1	<1.1
Fluoranthene	300		<0.10	0.20	0.20
Fluorene	300		<0.20	<0.20	<0.20
Hexachlorobenzene	0.02		<0.30	<0.40	<0.40
Hexachlorobutadiene	1		<0.60	<0.70	<0.70
Hexachlorocyclopentadiene	40		<0.70	<0.70	<0.70
Hexachloroethane	7		<1.0	<1.0	<1.0
Indeno(1,2,3-cd)pyrene	0.2		<0.084	<0.089	<0.089
Isophorone	40		<1.0	<1.0	<1.0
Naphthalene	300		<0.20	<0.20	<0.20

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Table 2. Summary of Semi-Volatile Organic Compounds Detected in Groundwater Samples, March 2009, Former Hyatt Clark Industries Site, Clark, New Jersey.

Constituent (ug/L)	NJDEP	Location ID:	MW-15	OW-32D	OW-32D
	Groundwater Standards	Date Collected:	03/03/09	03/04/09	03/04/09
		Sample Name:	MW-15PB_030309	OW-32DPB_030409	DUPPB_030409
Nitrobenzene	6		<1.0	<1.1	<1.1
N-Nitrosodimethylamine	0.8		<0.80	<0.80	<0.80
N-Nitroso-di-n-propylamine	10		<0.80	<0.80	<0.80
N-Nitrosodiphenylamine	10		<1.1	<1.2	<1.2
Pentachlorophenol	0.3		<2.2	<2.3	<2.3
Phenanthrene	--		<0.084	<0.089	<0.089
Phenol	2,000		<0.60	<0.70	<0.70
Pyrene	200		0.20	0.30	0.40

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method detection limit.

J Indicates an estimated value.

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Table 2. Summary of Semi-Volatile Organic Compounds Detected in Groundwater Samples, March 2009, Former Hyatt Clark Industries Site, Clark, New Jersey.

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Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	OW-46 03/06/09 OW-46PB_030609	FIELD_BLANK 03/03/09 FBPB_030309	FIELD_BLANK 03/04/09 FB_030409	FIELD_BLANK 03/06/09 FB_030609
1,2,4-Trichlorobenzene	9		<0.90	<1.0	<1.0	<0.90
1,2-Dichlorobenzene	600		<1.1	<1.1	<1.2	<1.1
1,3-Dichlorobenzene	600		<1.0	<1.0	<1.1	<1.0
1,4-Dichlorobenzene	75		<0.90	<0.90	<1.0	<0.90
2,2'-oxybis(1-Chloropropane)	300		<0.90	<0.90	<0.90	<0.80
2,4,6-Trichlorophenol	20		<2.2	<2.3	<2.4	<2.2
2,4-Dichlorophenol	20		<1.5	<1.5	<1.6	<1.4
2,4-Dimethylphenol	100		<2.1	<2.1	<2.2	<2.0
2,4-Dinitrophenol	40		<0.90	<0.90	<1.0	<0.90
2,4-Dinitrotoluene	--		<1.2	<1.2	<1.3	<1.1
2,6-Dinitrotoluene	--		<1.3	<1.3	<1.4	<1.3
2-Chloronaphthalene	600		<1.1	<1.1	<1.2	<1.1
2-Chlorophenol	40		<1.1	<1.1	<1.2	<1.1
2-Nitrophenol	--		<1.6	<1.6	<1.7	<1.6
3,3'-Dichlorobenzidine	30		<5.0	<5.1	<5.5	<4.9
4,6-Dinitro-2-methylphenol	--		<1.2	<1.3	<1.4	<1.2
4-Bromophenyl-phenylether	--		<1.2	<1.2	<1.3	<1.2
4-Chloro-3-Methylphenol	--		<1.7	<1.7	<1.8	<1.6
4-Chlorophenyl-phenylether	--		<1.1	<1.1	<1.2	<1.0
4-Nitrophenol	--		<0.90	<0.90	<1.0	<0.90
Acenaphthene	400		<0.10	<0.10	<0.10	<0.10
Acenaphthylene	--		<0.10	<0.10	<0.10	<0.10
Anthracene	2,000		<0.10	<0.10	<0.10	<0.10
Benzidine	20		<7.4 J	<7.5	<8.0	<7.2
Benzo(a)anthracene	0.1		<0.051	<0.052	<0.056	<0.050
Benzo(a)pyrene	0.1		<0.061	<0.062	<0.067	<0.060
Benzo(b)fluoranthene	0.2		<0.10	<0.10	<0.10	<0.10
Benzo(g,h,i)perylene	--		<0.092	<0.094	<0.10	<0.090
Benzo(k)fluoranthene	0.5		<0.092	<0.094	<0.10	<0.090
bis(2-Chloroethoxy)methane	--		<0.90	<0.90	<1.0	<0.90
bis(2-Chloroethyl)ether	7		<0.90	<0.90	<1.0	<0.90
bis(2-Ethylhexyl)phthalate	3		1.6	<1.1	<1.2	<1.0
Butylbenzylphthalate	100		<1.1	<1.1	<1.2	<1.0
Chrysene	5		<0.20	<0.20	<0.20	<0.20
Dibenzo(a,h)anthracene	0.3		<0.10	<0.10	<0.10	<0.10
Diethylphthalate	6,000		<0.80	<0.80	<0.90	<0.80
Dimethylphthalate	--		<1.1	<1.1	<1.2	<1.1
Di-n-Butylphthalate	700		<1.0	<1.0	<1.1	<1.0
Di-n-Octylphthalate	100		<1.0	<1.0	<1.1	<1.0
Fluoranthene	300		<0.10	<0.10	<0.10	<0.10
Fluorene	300		<0.20	<0.20	<0.20	<0.20
Hexachlorobenzene	0.02		<0.30	<0.30	<0.40	<0.30
Hexachlorobutadiene	1		<0.60	<0.60	<0.70	<0.60
Hexachlorocyclopentadiene	40		<0.60	<0.70	<0.70	<0.60
Hexachloroethane	7		<0.90	<0.90	<1.0	<0.90
Indeno(1,2,3-cd)pyrene	0.2		<0.082	<0.083	<0.089	<0.080
Isophorone	40		<1.0	<1.0	<1.0	<0.90
Naphthalene	300		<0.20	<0.20	<0.20	<0.20

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Table 2. Summary of Semi-Volatile Organic Compounds Detected in Groundwater Samples, March 2009, Former Hyatt Clark Industries Site, Clark, New Jersey.

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	OW-46	FIELD_BLANK	FIELD_BLANK	FIELD_BLANK
			03/06/09 OW-46PB_030609	03/03/09 FBPB_030309	03/04/09 FB_030409	03/06/09 FB_030609
Nitrobenzene	6		<1.0	<1.0	<1.1	<1.0
N-Nitrosodimethylamine	0.8		<0.80	<0.80	<0.80	<0.70
N-Nitroso-di-n-propylamine	10		<0.80	<0.80	<0.80	<0.70
N-Nitrosodiphenylamine	10		<1.1	<1.1	<1.2	<1.1
Pentachlorophenol	0.3		<2.1	<2.2	<2.3	<2.1
Phenanthrene	--		<0.082	<0.083	<0.089	<0.080
Phenol	2,000		<0.60	<0.60	<0.70	<0.60
Pyrene	200		0.20	<0.10	<0.10	<0.10

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method detection limit.

J Indicates an estimated value.

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Table 3. Summary of Metals Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Sample Date: Sample Name:	MW-15 03/03/09 MW-15PB_030309	MW-37 03/04/09 MW-37BLF_030409	OW-32D 03/04/09 OW-32DPB_030409	OW-32D 03/04/09 DUPPB_030409	OW-46 03/06/09 OW-46PB_030609
<u>Inorganics</u>							
Antimony	6		<5.80	<5.80	<5.80	<5.80	<5.80
Arsenic	3		4.00 J	<3.20	<3.20	<3.20	7.90
Beryllium	1		<0.300	<0.300	<0.300	<0.300	<0.300
Cadmium	4		<0.400	<0.400	<0.400	<0.400	<0.400
Chromium	70		77.5	2.90 J	1.70 J	2.20 J	1.60 J
Copper	1,300		28.3	<3.70	<3.70	<3.70	37.6
Lead	5		16.3	<2.70	<2.70	<2.70	<2.70
Mercury	2		<0.100	<0.100	<0.100	<0.100	<0.100
Nickel	100		59.4	<2.40	3.00 J	2.40 J	18.4 J
Selenium	40		<4.20	<4.20	<4.20	<4.20	<4.20
Silver	40		<1.40	<1.40	<1.40	<1.40	<1.40
Thallium	2		<4.70	<4.70	<4.70	<4.70	<4.70
Zinc	2,000		245	<5.80	6.50 J	<5.80	6.60 J
<u>Inorganics-Filtered</u>							
Antimony	6		<5.8	<5.8	<5.8	<5.8	<5.8
Arsenic	3		<3.2	<3.2	<3.2	<3.2	10
Beryllium	1		<0.3	<0.3	<0.3	<0.3	<0.3
Cadmium	4		<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	70		2 J	<1.6	<1.6	<1.6	<1.6
Copper	1,300		<3.7	<3.7	<3.7	<3.7	<3.7
Lead	5		<2.7	<2.7	<2.7	<2.7	<2.7
Mercury	2		<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	100		20.3 J	<2.4	<2.4	<2.4	18.3 J
Selenium	40		<4.2	<4.2	<4.2	<4.2	<4.2
Silver	40		<1.4	<1.4	<1.4	<1.4	<1.4
Thallium	2		<4.7	<4.7	<4.7	<4.7	<4.7
Zinc	2,000		<5.8	<5.8	<5.8	<5.8	<5.8

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method detection limit.

J Indicates an estimated value.

NA Not analyzed.

ARCADIS

Table 3. Summary of Metals Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Sample Date: Sample Name:	FIELD_BLANK 03/03/09 FBPB_030309	FIELD_BLANK 03/04/09 FB_030409	FIELD_BLANK 03/06/09 FB_030609
<u>Inorganics</u>					
Antimony	6		<5.80	<5.80	<5.80
Arsenic	3		<3.20	<3.20	<3.20
Beryllium	1		<0.300	<0.300	<0.300
Cadmium	4		<0.400	<0.400	<0.400
Chromium	70		<1.60	<1.60	<1.60
Copper	1,300		<3.70	<3.70	<3.70
Lead	5		<2.70	<2.70	<2.70
Mercury	2		<0.100	<0.100	<0.100
Nickel	100		<2.40	<2.40	<2.40
Selenium	40		<4.20	<4.20	<4.20
Silver	40		<1.40	<1.40	<1.40
Thallium	2		<4.70	<4.70	<4.70
Zinc	2,000		<5.80	<5.80	<5.80
<u>Inorganics-Filtered</u>					
Antimony	6		NA	NA	NA
Arsenic	3		NA	NA	NA
Beryllium	1		NA	NA	NA
Cadmium	4		NA	NA	NA
Chromium	70		NA	NA	NA
Copper	1,300		NA	NA	NA
Lead	5		NA	NA	NA
Mercury	2		NA	NA	NA
Nickel	100		NA	NA	NA
Selenium	40		NA	NA	NA
Silver	40		NA	NA	NA
Thallium	2		NA	NA	NA
Zinc	2,000		NA	NA	NA

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method detection limit

J Indicates an estimated value.

NA Not analyzed.

ARCADIS

Table 4. Summary of PCBs Detected in Groundwater Samples, March 2009, Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID: Date Collected: Sample Name:	MW-15 03/03/09 MW-15PB_030309	MW-21 03/05/09 MW-21LF_030509	MW-21 03/05/09 MW-21PB_030509	MW-37 03/04/09 MW-37BLF_030409	MW-37B 03/04/09 MW-37BPF_030409
Aroclor-1016	--		<0.23	<0.23	<0.23	<0.23	<0.23
Aroclor-1221	--		<0.36	<0.36	<0.36	<0.36	<0.36
Aroclor-1232	--		<0.26	<0.26	<0.26	<0.26	<0.26
Aroclor-1242	--		<0.21	<0.21	<0.21	<0.21	<0.21
Aroclor-1248	--		<0.36	<0.36	<0.36	<0.36	<0.36
Aroclor-1254	--		<0.34	<0.34	<0.34	<0.34	<0.34
Aroclor-1260	--		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor-1262	--		<0.18	<0.18	<0.18	<0.18	<0.18
Aroclor-1268	--		<0.18	<0.18	<0.18	<0.18	<0.18
Total PCBs	0.5		<0.36	<0.36	<0.36	<0.36	<0.36

All units are in micrograms per liter (ug/L)
 < Constituent not detected above the method detection limit.

Table 4. Summary of PCBs Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID:		Date Collected:		Sample Name:		MW-37B2LF_030409		MW-37B2PB_030409		MW-37B3LF_030409		MW-37B3PB_030409		MW-37R	
		MW-37B2		03/04/09		MW-37B2LF_030409		MW-37B2PB_030409		MW-37B2		03/04/09		MW-37B3		03/04/09	
Aroclor-1016	--	<0.23		<0.23		<0.23		<0.23		<0.23		<0.23		<0.23		<0.23	
Aroclor-1221	--	<0.36		<0.36		<0.36		<0.36		<0.36		<0.36		<0.36		<0.36	
Aroclor-1232	--	<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26	
Aroclor-1242	--	<0.21		<0.21		<0.21		<0.21		<0.21		<0.21		<0.21		<0.21	
Aroclor-1248	--	<0.36		<0.36		<0.36		<0.36		<0.36		<0.36		<0.36		<0.36	
Aroclor-1254	--	<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.34		<0.34	
Aroclor-1260	--	<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
Aroclor-1262	--	<0.18		<0.18		<0.18		<0.18		<0.18		<0.18		<0.18		<0.18	
Aroclor-1268	--	<0.18		<0.18		<0.18		<0.18		<0.18		<0.18		<0.18		<0.18	
Total PCBs	0.5	<0.36		<0.36		<0.36		<0.36		<0.36		<0.36		<0.36		<0.36	

All units are in micrograms per liter (ug/L)
< Constituent not detected above the method
detection limit.

Table 4. Summary of PCBs Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID:		MW-37R 03/04/09 DUPLF_030409	MW-37RPB_030409	MW-38LF_030309	MW-38PB_030309	MW-38B 03/03/09 MW-38BLF_030309
		Date Collected:	Sample Name:					
Aroclor-1016	--	<0.23		<0.23		<0.23		<0.23
Aroclor-1221	--	<0.36		<0.36		<0.36		<0.36
Aroclor-1232	--	<0.26		<0.26		<0.26		<0.26
Aroclor-1242	--	<0.21		<0.21		<0.21		<0.21
Aroclor-1248	--	<0.36		<0.36		<0.36		<0.36
Aroclor-1254	--	<0.34		<0.34		<0.34		<0.34
Aroclor-1260	--	<0.2		<0.2		<0.2		<0.2
Aroclor-1262	--	<0.18		<0.18		<0.18		<0.18
Aroclor-1268	--	<0.18		<0.18		<0.18		<0.18
Total PCBs	0.5	<0.36		<0.36		<0.36		<0.36

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method
detection limit.

Table 4. Summary of PCBs Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID:		Date Collected:		Sample Name:		MW-38B 03/03/09		MW-39 03/03/09		MW-39B 03/03/09	
								MW-38B 03/03/09		MW-39 03/03/09		MW-39B 03/03/09	
								DUPPB_030309		MW-39LF_030309		MW-39BLF_030309	
Aroclor-1016	--							<0.23		<0.23		<0.23	
Aroclor-1221	--							<0.36		<0.36		<0.36	
Aroclor-1232	--							<0.26		<0.26		<0.26	
Aroclor-1242	--							<0.21		<0.21		<0.21	
Aroclor-1248	--							<0.36		<0.36		<0.36	
Aroclor-1254	--							<0.34		<0.34		<0.34	
Aroclor-1260	--							<0.2		<0.2		<0.2	
Aroclor-1262	--							<0.18		<0.18		<0.18	
Aroclor-1268	--							<0.18		<0.18		<0.18	
Total PCBs	0.5							<0.36		<0.36		<0.36	

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method
detection limit.

Table 4. Summary of PCBs Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID:		OW-32D 03/04/09 DUPPB_030409	OW-32D 03/03/09 OW-32DPB_030409	OW-46 03/06/09 OW-46PB_030609	FIELD_BLANK 03/03/09 FBLF_030309
		Date Collected:	Sample Name:				
Aroclor-1016	--			<0.23	<0.46	<0.23	<0.23
Aroclor-1221	--			<0.36	<0.72	<0.36	<0.36
Aroclor-1232	--			<0.26	<0.52	<0.26	<0.26
Aroclor-1242	--			<0.21	<0.42	<0.21	<0.21
Aroclor-1248	--			<0.36	11	<0.36	<0.36
Aroclor-1254	--			<0.34	<0.68	<0.34	<0.34
Aroclor-1260	--			<0.2	<0.4	<0.2	<0.2
Aroclor-1262	--			<0.18	<0.36	<0.18	<0.18
Aroclor-1268	--			<0.18	<0.36	<0.18	<0.18
Total PCBs	0.5			11	7	<0.36	<0.36

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method
detection limit.

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Table 4. Summary of PCBs Detected in Groundwater Samples, March 2009,
Former Hyatt Clark Industries Site, Clark, New Jersey

Constituent (ug/L)	NJDEP Groundwater Standards	Location ID:		FIELD_BLANK 03/03/09 FBPB_030309	FIELD_BLANK 03/04/09 FB_030409	FIELD_BLANK 03/05/09 FB_030509	FIELD_BLANK 03/06/09 FB_030609
		Date Collected:	Sample Name:				
Aroclor-1016	--			<0.23	<0.23	<0.23	<0.23
Aroclor-1221	--			<0.36	<0.36	<0.36	<0.36
Aroclor-1232	--			<0.26	<0.26	<0.26	<0.26
Aroclor-1242	--			<0.21	<0.21	<0.21	<0.21
Aroclor-1248	--			<0.36	<0.36	<0.36	<0.36
Aroclor-1254	--			<0.34	<0.34	<0.34	<0.34
Aroclor-1260	--			<0.2	<0.2	<0.2	<0.2
Aroclor-1262	--			<0.18	<0.18	<0.18	<0.18
Aroclor-1268	--			<0.18	<0.18	<0.18	<0.18
Total PCBs	0.5			<0.36	<0.36	<0.36	<0.36

All units are in micrograms per liter (ug/L)

< Constituent not detected above the method
detection limit.

ARCADIS

APPENDIX D

GROUNDWATER QUALITY FIGURES

11 CONCENTRATIONS WHICH EXCEEDED THE NJDEP
GROUNDWATER STANDARD

J ESTIMATED VALUE

B DETECTED IN FIELD BLANK
(FOR ORGANIC PARAMETERS ONLY)

B DETECTED BETWEEN THE INSTRUMENT DETECTION
LIMIT AND THE CONTRACT REQUIRED DETECTION LIMIT
(FOR INORGANIC PARAMETERS ONLY)

R UNUSABLE VALUE

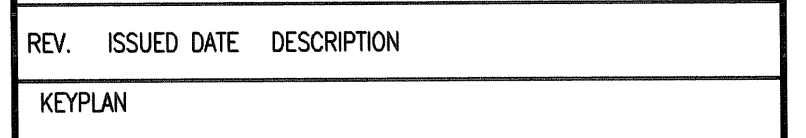
ND NOT DETECTED

NA NOT ANALYZED

NS NOT SAMPLED

ft msl FEET ABOVE MEAN SEA LEVEL

NOTE:

[illegible]

SHEET TITLE



www.arcadis-us.com	
SEAL	SEAL

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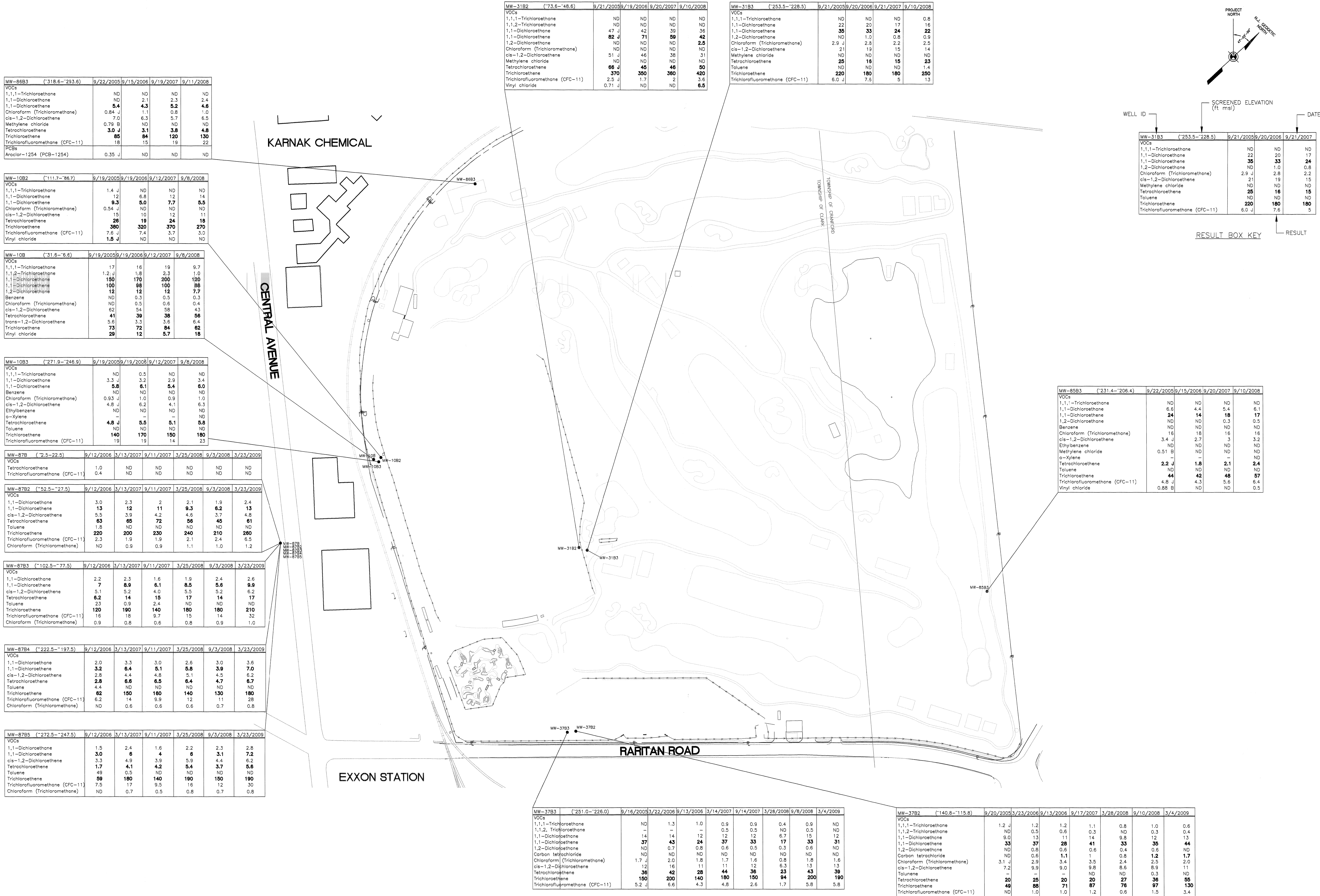
PROJECT MANAGER J. MESSINGER	DEPARTMENT MANAGER C. MOTTA
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D. HEUER	J. MESSINGER
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PROJECT NUMBER	DRAWING NUMBER
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1000000000000000000	D-9
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[illegible]



MW-10B2	(111.7--88.7)	9/19/2005	9/19/2006	9/12/2007	9/8/2008
1,1,1-Trichloroethane	1.4	ND	ND	ND	
1,1-Dichloroethane	12	6.6	12	14	
1,1-Dichloroethene	3.3	5.0	7.7	5.5	
Chloroform (Trichloromethane)	0.54	ND	ND	ND	
cis-1,2-Dichloroethene	15	10	12	11	
Tetrachloroethene	26	19	24	18	
Trichloroethene	386	320	370	270	
Trichlorofluoromethane (CFC-11)	7.6	7.4	3.7	3.0	
Vinyl Chloride	1.5	ND	ND	ND	

MW-22D	(44.2--54.2)	10/4/2005	11/18/2005	5/30/2006
1,1-Dichloroethane	1.13	0.589	ND	
Trichloroethene	4.97	3.43	8.4	

MW-20B	(44.78--54.78)	10/13/2005	11/18/2005	5/30/2006
1,1-Dichloroethane	ND	0.715	ND	
1,1-Dichloroethene	ND	1.99	1.2	
Acetone	ND	ND	10.1	
Chloroform (Trichloromethane)	ND	0.935	1.8	
cis-1,2-Dichloroethene	ND	1.88	1.9	
Trichloroethene	4.84	21.0	14.7	

MW-20D	(119.7--139.7)	10/8/2005	11/17/2005	5/31/2006
1,1-Dichloroethane	3.51	1.47	2.5	
1,1-Dichloroethene	8.45	8.45	4.8	
Acetone	1.00	ND	ND	
Benzene	ND	0.412	ND	
Chloroform (Trichloromethane)	4.45	3.35	1.3	
cis-1,2-Dichloroethene	3.06	12.5	10.6	
Tetrachloroethene	1.77	1.85	ND	
Trichloroethene	59.4	98.2	88.1	
Trichlorofluoromethane (CFC-11)	10.5	15.2	ND	

MW-23D	(37.0--42.0)	10/12/2005	11/17/2005	5/31/2006
cis-1,2-Dichloroethene	1.50	1.80	1.9	
Trichloroethene	97.9	96.9	90.5	
Trichlorofluoromethane (CFC-11)	3.87	2.49	ND	

MW-19A	(118.8--21.8)	10/13/2005	11/18/2005	5/31/2006
cis-1,2-Dichloroethene	17.2	35.4	23.6	
Trichloroethene	2000	3870	2019	
Trichlorofluoromethane (CFC-11)	ND	ND	ND	

MW-19B	(45.9--95.9)	10/8/2005	11/18/2005	5/31/2006
Benzene	ND	6.65	ND	
Chloroform (Trichloromethane)	2.07	2.45	1.5	
cis-1,2-Dichloroethene	2.31	1.53	1.3	
Methyl tert-butyl ether (MTBE)	1.36	ND	ND	
Trichloroethene	183	184	68.8	
Trichlorofluoromethane (CFC-11)	6.00	3.32	ND	

MW-19D	(127.2--147.2)	10/11/2005	11/18/2005	5/30/2006
1,1-Dichloroethane	3.39	2.92	2.4	
1,1-Dichloroethene	10.2	8.48	6.2	
Chloroform (Trichloromethane)	3.37	3.49	3.9	
cis-1,2-Dichloroethene	6.95	8.66	6.5	
Tetrachloroethene	3.76	2.65	4.5	
Trichloroethene	141	291	113	
Trichlorofluoromethane (CFC-11)	20.5	19.5	ND	

MW-19C6	(236.1--241.1)	10/12/2005	11/18/2005	5/31/2006
1,1-Dichloroethane	1.48	ND	1.7	
1,1-Dichloroethene	2.80	ND	2.8	
Chloroform (Trichloromethane)	0.708	ND	ND	
cis-1,2-Dichloroethene	4.27	10.6	12.9	
Tetrachloroethene	2.29	ND	1.8	
Trichloroethene	124	534	351	
Trichlorofluoromethane (CFC-11)	25.7	34.4	14.9	

MW-10B	(213.9--218.9)	10/12/2005	11/18/2005	5/31/2006
1,1-Dichloroethane	3.30	2.77		
1,1-Dichloroethene	7.20	6.17		
Chloroform (Trichloromethane)	1.47	1.35		
cis-1,2-Dichloroethene	6.02	7.98		
Methyl tert-butyl ether (MTBE)	0.470	ND		
Tetrachloroethene	5.57	6.58		
Trichloroethene	169	154		
Trichlorofluoromethane (CFC-11)	42.8	26.9		

MW-21D	(121.5--141.5)	10/6/2005	11/18/2005	5/31/2006
1,1-Dichloroethane	2.91	2.56	2.7	
1,1-Dichloroethene	6.80	5.76	6.8	
Acetone	4.11	ND	ND	
Benzene	ND	1.35	ND	
Chloroform (Trichloromethane)	1.18	1.07	1.2	
cis-1,2-Dichloroethene	6.71	8.5	6.4	
Tetrachloroethene	5.49	5.80	5.5	
Trichloroethene	146	133	144	
Trichlorofluoromethane (CFC-11)	32.0	23.9	27.4	

MW-21D6	(193.1--198.1)	10/11/2005	11/18/2005	5/31/2006
1,1-Dichloroethane	4.27	2.58	2.3	
1,1-Dichloroethene	7.12	6.24	5.1	
Chloroform (Trichloromethane)	1.88	1.10	1.0	
cis-1,2-Dichloroethene	10.8	7.95	7.8	
Tetrachloroethene	6.93	4.19	4.4	
Toluene	ND	0.458	ND	
Trichloroethene	158	328	119	
Trichlorofluoromethane (CFC-11)	59.5	22.6	20.5	

MW-86B3	(318.6--293.6)	9/22/2005	9/15/2006	9/19/2007	9/11/2008
1,1-Dichloroethane	ND	2.1	2.3	2.4	
1,1-Dichloroethene	5.4	4.3	5.2	4.8	
Chloroform (Trichloromethane)	0.84	1.1	0.8	1.0	
cis-1,2-Dichloroethene	7.0	6.3	5.7	6.5	
Methylene Chloride	0.79	ND	ND	ND	
Tetrachloroethene	3.9	3.1	3.8	4.8	
Trichloroethene	85	84	120	138	
Trichlorofluoromethane (CFC-11)	18	15	19	22	

MW-21S	(47.5--67.5)	10/12/2005	11/18/2005	5/31/2006
1,1-Dichloroethane	ND	ND	9.4	
cis-1,2-Dichloroethene	25.9	47.0	63.3	
Tetrachloroethene	53.1	124	138	
Trichloroethene	1250	2520	2840	
Trichlorofluoromethane (CFC-11)	22.5	ND	ND	

MW-87B	(2.5--22.5)	9/12/2006	3/13/2007	9/11/2007	3/25/2008	9/3/2008	3/23/2009
Tetrachloroethene	1.0	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (CFC-11)	0.4	ND	ND	ND	ND	ND	ND

MW-87B2	(62.5--27.5)	9/12/2006	3/13/2007	9/11/2007	3/25/2008	9/3/2008	3/23/2009
1,1-Dichloroethane	3.0	2.3	2	2.1	1.9	2.4	
1,1-Dichloroethene	13	12	11	9.2	6.2	13	
cis-1,2-Dichloroethene	5.5	3.9	4.2	4.6	3.7	4.8	
Tetrachloroethene	63	55	72	58	45	61	
Toluene	1.8	ND	ND	ND	ND	ND	
Trichloroethene	220	200	230	240	218	250	
Trichlorofluoromethane (CFC-11)	2.3	1.9	1.9	2.1	2.4	6.5	
Chloroform (Trichloromethane)	ND	0.9	0.9	1.1	1.0	1.2	

MW-87B3	(102.5--77.5)	9/12/2006	3/13/2007	9/11/2007	3/25/2008	9/3/2008	3/23/2009
1,1-Dichloroethane	2.2	2.3	1.6	1.9	2.4	2.6	
1,1-Dichloroethene	7	5.9	6.1	8.5	5.6	9.9	
cis-1,2-Dichloroethene	5.1	5.2	4.0	5.5	5.2	6.2	
Tetrachloroethene	5.2	14	15	17	14	17	
Toluene	23	0.9	2.4	ND	ND	ND	
Trichloroethene	120	190	140	180	180	210	
Trichlorofluoromethane (CFC-11)	16	18	8.7	15	14	32	
Chloroform (Trichloromethane)	0.9	0.8	0.6	0.8	0.9	1	

MW-87B4	(222.5--197.5)	9/12/2006	3/13/2007	9/11/2007	3/25/2008	9/3/2008	3/23/2009
1,1-Dichloroethane	2.0	3.3	3.0	2.6	3.0	3.6	
1,1-Dichloroethene	3.2	5.4	5.1	6.8	3.9	7	
cis-1,2-Dichloroethene	2.8	4.4	4.6	5.1	4.6	6.2	
Tetrachloroethene	2.8	5.8	6.5	6.4	4.7	6.7	
Toluene	4.4	ND	ND	ND	ND	ND	
Trichloroethene	62	150	190	140	130	180	
Trichlorofluoromethane (CFC-11)	6.2	14	9.9	12	11	28	
Chloroform (Trichloromethane)	1.0	1.0	1.0	0.8	0.7	0.8	

MW-87B5	(272.5--247.5)	9/12/2006	3/13/2007	9/11/2007	3/25/2008	9/3/2008	3/23/2009
1,1-Dichloroethane	1.5	2.4	1.6	2.2	2.3	2.8	
1,1-Dichloroethene	3.0	8	4	8	3.1	7.2	
cis-1,2-Dichloroethene	3.2	4.9	3.9	5.9	4.4	6.2	
Tetrachloroethene	1.7	4.1	4.2	5.4	3.7	5.6	
Toluene	49	0.5	ND	ND	ND	ND	
Trichloroethene	89	180	140	190	160	190	
Trichlorofluoromethane (CFC-11)	7.5	17	9.5	16	12	30	
Chloroform (Trichloromethane)	ND	0.7	0.5	0.8	0.7	0.8	

MW-31B2	(73.6--48.6)	9/21/2005	9/19/2006	9/20/2007	9/10/2008
1,1-Dichloroethane	47	42	39	36	
1,1-Dichloroethene	82	71	59	42	
cis-1,2-Dichloroethene	51	46	38	31	
Tetrachloroethene	55	45	46	50	
Trichloroethene	372	350	350	420	
Trichlorofluoromethane (CFC-11)	2.5	1.7	2	3.6	
Vinyl Chloride	0.71	ND	ND	6.5	

MW-31B3	(263.5--228.5)	9/21/2005	9/20/2006	9/21/2007	9/11/2008
1,1-Dichloroethane	22	20	17	16	
1,1-Dichloroethene	35	33	24	22	
1,2-Dichloroethene	ND	1.0	0.8	0.9	
Chloroform (Trichloromethane)	2.9	2.8	2.2	2.5	
cis-1,2-Dichloroethene	21	19	15	14	
Tetrachloroethene	25	18	15	23	
Trichloroethene	230	180	180	250	
Trichlorofluoromethane (CFC-11)	6.0	7.6	5	13	

MW-85B3	(231--208.4)	9/22/2005	9/15/2006	9/20/2007	9/10/2008
1,1-Dichloroethane	6.6	4.4	5.4	6.1	
1,1-Dichloroethene	24	14	18	17	
1,2-Dichloroethene	ND	ND	0.3	0.5	
Chloroform (Trichloromethane)	16	18	16	16	
cis-1,2-Dichloroethene	3.4	2.7	3	3.2	
Methylene Chloride	0.51	ND	ND	ND	
Tetrachloroethene	2.2	1.8	2.1	2.4	
Trichloroethene	44	42	48	57	
Trichlorofluoromethane (CFC-11)	4.8	4.3	5.6	6.4	
Vinyl Chloride	0.88	ND	ND	0.5	

USG-02	12/18/1997
1,1,1-Trichloroethane	1.4
1,1-Dichloroethane	2.1
1,1-Dichloroethene	9.5
cis-1,2-Dichloroethene	6.4
Chloroform (Trichloromethane)	15
Tetrachloroethene	5.2
Trichloroethene	120
Trichlorofluoromethane (CFC-11)	7.2

USG-61	12/18/1997
1,1-Dichloroethane	2.6
cis-1,2-Dichloroethene	3.1
Chloroform (Trichloromethane)	4.9
Tetrachloroethene	2.3
Trichloroethene	41
Trichlorofluoromethane (CFC-11)	4.7

LEGEND

- EXISTING AT&T BEDROCK MONITORING WELL
- US GYPSUM PRODUCTION WELL
- EXISTING DEEP BEDROCK MONITORING WELL
- HCI-1 FORMER HYATT CLARK INDUSTRIES PRODUCTION WELL
- BEDROCK STRIKE AND DIP

NJDEP GROUNDWATER STANDARDS		
ANALYTES	UNITS	IN µg/L
VOCs		
1,1,1-Trichloroethane		30
1,1,2-Trichloroethane		3
1,1-Dichloroethane		50
1,1-Dichloroethene		1
1,2-Dichloroethene		2
1,1,2,2-Tetrachloroethane		1
Chloroform (Trichloromethane)		70
Cis-1,2-Dichloroethene		70
Benzene		1
Methylene Chloride		3
Tetrachloroethene		1000
Toluene		100
Trans-1,2-Dichloroethene		1
Trichloroethene		1
Vinyl Chloride		1
Carbon Tetrachloride		1

- ND NOT DETECTED
- ft msl FEET ABOVE MEAN SEA LEVEL
- ND SAMPLE NOT DETECTED ABOVE LABORATORY REPORTING LIMITS
- BOLD** SAMPLE RESULTS EXCEED NJDEP GROUNDWATER QUALITY STANDARD

NOTE:

1. ALL ANALYTES ARE REPORTED IN MICROGRAMS PER LITER (µg/L).
2. WHEN A DUPLICATE SAMPLE ANALYSIS WAS PERFORMED THE DATA REPORTED ON THE DRAWING IS THE GREATER OF THE TWO ANALYTICAL RESULTS
3. WHEN PASSIVE DIFFUSION BAG SAMPLERS WERE DEPLOYED AT VARIOUS DEPTHS WITHIN THE WELL SCREEN, THE GREATER OF THE SAMPLE RESULTS ARE SHOWN.

LEGEND:

SAMPLE ID	CONSTITUENT	SCREENED ELEVATION (ft msl)		SAMPLE DATE		SAMPLE RESULT
		9/12/2006	3/13/2007	9/11/2007	3/25/2008	
MW-87B	(2.5--22.5)	1.0	ND	ND	ND	ND
	Trichlorofluoromethane (CFC-11)	0.4	ND	ND	ND	ND

