



ENVIRONMENTAL  
ASSESSMENT &  
REMEDIATIONS

November 11, 2008

Kristy Salafrio  
NYSDEC- Region One Headquarters  
SUNY @ Stony Brook  
50 Circle Road  
Stony Brook, NY 11790

Dear Ms. Salafrio:

**SUBJECT: NYSDEC SPILL # 07-50455 GLORIA ROAD, BETHPAGE, NY – SAMPLING OF  
OUTPOST MONITORING WELLS**

On June 29, 2007 the New York State Department of Environmental Conservation (NYSDEC) contracted Environmental Assessment & Remediations (EAR) to resample two monitoring wells (OW2-1 and OW2-2) located along Gloria Road in Bethpage, NY due to the presence of benzene and methyl tertiary butyl ether (MTBE) detected in OW2-1. The two monitoring wells were installed as part of an outpost monitoring program for the Naval Weapons Industrial Reserve Plant (NWIRP) to provide advanced warning of potential contaminant impact to local public water suppliers. A copy of the outpost monitoring well installation summary report is provided as Appendix A. An area location map is presented as Figure 1.

On July 3, 2007 representatives from EAR and the NYSDEC met on-site to collect samples from the monitoring wells and noticed that dedicated sampling systems were installed in each of the wells. The outpost monitoring well pump installation data report is provided as Appendix B. Based on the schematics of the dedicated sampling system, a packer and pump was installed in each well with the packer set in the well riser above the screened interval of the well, and the pump set below the packer still in the riser section of the well. In the case of OW2-1, the packer was set at approximately 308 feet below the top of the well casing, the pump intake was set at approximately 312 feet below the top of the well casing, and the top of the well screen is approximately 360 feet below the top of the casing.

After discussions between the NYSDEC and Tetra Tech (Contractor to the Navy), EAR removed the dedicated packer systems on July 6, 2007. The packer systems were removed with the oversight of Tetra Tech and the packer systems were transported to the NWIRP for storage by Tetra Tech.

On July 6, 2007 after removal of the packers, EAR proceeded to purge OW2-1 and collected 20 samples over the course of well purging (240 minutes). On July 9, 2007, OW2-2 was purged and 11 samples were collected over the course of well purging (100 minutes). OW2-1 was sampled again on July 9<sup>th</sup> with 15 samples collected over the course of well purging (165 minutes). All purge water was treated using granular activated carbon drums. The depth to water in the wells was approximately 19 feet and the sampling pump was set a few feet into the water. The sampling pump utilized was estimated to be pumping approximately 6 gallons per minute. Groundwater samples were screened in the field using a water quality probe with flow thru cell (YSI 556 or similar) for temperature, pH, dissolved oxygen, conductivity and oxidation reduction potential (ORP). The samples were analyzed on-site by a mobile laboratory equipped with a gas chromatograph and mass spectrometer (GC/MS). Select samples from each well were submitted to EcoTest laboratories (North Babylon, NY) for analysis via EPA Method 8260. One sample from each well was submitted to Microseeps, Inc (Pittsburgh, PA) for fuel oxygenate analysis via a modified EPA Method 524.2 and was also submitted to H2M Labs, Inc (Melville, NY) for analysis of 1,2 dibromoethane (EDB) via EPA Method 504. One sample from each well was submitted to Bodycote Testing Group (Santa Fe, CA) for analysis of 1,4 dioxane via a modified EPA Method 8270. Analytical results are presented in Tables 1-4.

A wide range of hydrocarbons and halocarbons were detected in the samples collected from OW2-1, with samples collected on 7/6/07 revealing benzene concentrations up to 490 ug/L and MTBE concentrations up to 43 ug/L. The halocarbons detected ranged up to 10 ug/L and other fuel oxygenates detected were Diisopropyl Ether (DIPE), Tert-Amyl Alcohol (TAA) and Tert-Butyl Alcohol (TBA). Low concentrations

(<10 ug/L) of DIPE and TAA were observed, while concentrations up to 160 ug/L of TBA were noted (Table 2). As shown in Figure 2 concentrations of benzene and MTBE decreased as gallons of water purged from OW2-1 increased. A similar trend was observed in the analytical results from the 7/9/07 sampling of OW2-1 (see Figure 3). Benzene, MTBE and other fuel oxygenates were not detected in the samples collected from OW2-2, however low concentrations (<5 ug/L) of halocarbons were detected. Analytical results for 1,4-Dioxane revealed non-detectable concentrations in both wells; EDB was reported at non-detectable concentrations in OW2-2 and at 0.23 ug/L in OW2-1.

Pressure transducers (Level Troll 700) were installed in OW2-1 and OW2-2 in July 2007 to evaluate affects of the public water supply, South Farmingdale Water District (SFWD) Well 3-1, on the pressure head at this location. Changes in head pressure were plotted and directly correlate to the operational status of Well 3-1. Approximately 1.5-feet of change in head pressure was observed in OW2-1 and up to 3-feet of change in head pressure was observed in OW2-2 when Well 3-1 was in operation (Please see Figure 4).

In an effort to define the nature and extent of the contamination at this location, Rotosonic drilling techniques were utilized to install three multi-level (ML) monitoring wells with target depths of 400-ft below grade surface. Multi-level well ML-1 was installed approximately 10-feet east of OW2-1. Installation of ML-1 was completed on October 12, 2007 and groundwater samples were collected. Based upon the initial sampling results from ML-1, installation of ML-2 began on October 15, 2007 and was located approximately 85-feet west of OW2-1. Upon completion of ML-2, groundwater samples were immediately collected and initial sampling results were evaluated prior to placement of ML-3 which was located approximately 80-feet east of OW2-1. A sitemap is provided as Figure 5. Each ML well contains 12 individual sampling points spaced at fifteen-foot intervals, with total well depths ranging from 395 to 398-feet below grade surface. For each of these wells, 11 sample points are constructed of ½-inch diameter schedule 40 PVC riser and a 5-foot section of ½-inch diameter, 0.020" slotted PVC screen. The central risers are constructed of 2.0-inch diameter schedule 40 PVC riser with a 5-foot section of 2.0-inch diameter, 0.020" slotted PVC screen. During each installation, soil samples were collected from grade to the end of boring from posthole samples and core samples. Drill logs for these wells are included in Appendix C and provide a description of the soil lithology and well construction.

Groundwater samples initially collected from ML-1 and ML-2 were analyzed on-site by a mobile laboratory equipped with a GC/MS. Groundwater samples were screened in the field using a water quality probe with flow thru cell (YSI 556 or similar) for temperature, pH, dissolved oxygen, conductivity and ORP. Groundwater samples collected on October 23 and 24<sup>th</sup> were submitted to H2M Labs, Inc for analysis via EPA Method 524.2, as well as the onsite mobile lab. OW2-1 was sampled during this time as well and submitted to the onsite mobile laboratory for analysis. After the installation of ML-3 in early November 2007, groundwater samples were collected from this location were screened for temperature, pH, dissolved oxygen, conductivity and ORP and were also submitted to H2M Labs, Inc for analysis via EPA Method 524.2. Analytical results from these samplings are presented as Tables 5 -7.

During the October 2007 sampling of OW2-1 benzene (510 ug/L), MTBE (36 ug/L), TAA (55 ug/L) and TBA (80 ug/L) were detected as well as low levels of halocarbons. With the exception ML-2H (benzene: 3ug/L), benzene was reported at non-detectable concentrations in all other discrete sampling locations of ML-1, ML-2 and ML-3. Low concentration of MTBE (0.5 ug/L in ML-1B) and toluene (1 ug/L in ML-1L and 2 ug/L in ML-2H) as well as low levels of halocarbons were reported in the ML wells.

Since significant concentrations were not found in the ML wells screened at the same elevation as the screened interval of OW2-1, additional investigation was warranted. In order to facilitate discrete sampling zones within the screened interval of OW2-1 an inflatable straddle packer assembly with a Solinst Integra Bladder Pump was utilized to isolate 5-foot sections of the well screen to further investigate. The deepest sample was collected from 390-feet BGS and sample collection proceeded at 5-foot intervals up to 355-feet BGS. At each location, once the packer assembly was positioned at the desired depth the packers were inflated using a nitrogen gas supply and then were purged a minimum of 1-2 well volumes at a low flow rate. In addition, groundwater samples were collected from ML-1, ML-2 and ML-3. All samples were screened in the field using a water quality probe with flow thru cell (YSI 556 or similar) for temperature, pH, dissolved oxygen, conductivity and ORP. Samples were submitted to H2M Labs, Inc for analysis via EPA Method 524.2 and fuel oxygenates analysis via a modified EPA Method 8260. Analytical results are presented in Tables 8-9.

During this June/July 2008 sampling event, benzene was reported in all discrete sampling zones within OW2-1, with concentrations reported up to 900 ug/L. MTBE, other fuel oxygenates and halocarbons were reported in OW2-1 at similar concentrations as previous sampling events. Excluding ML-1B and ML-3A, analytical results

from the multi-level wells (ML-1, ML-2 and ML-3) reported non-detectable concentrations of benzene and MTBE in all discrete sampling depth. MTBE was reported at 1 ug/L in ML-1B and benzene was reported at 0.6 ug/L in ML-3A. Toluene was reported in a few discrete sampling depths of the ML wells with a maximum concentration of 2 ug/L as well low levels of halocarbons.

Based on the data collected thru to this time period, the construction of OW2-1 became suspect. In an effort to evaluate the possibility of a crack/leak in the riser section of OW2-1, the inflatable straddle packer assembly was utilized to isolate the screen zone to facilitate investigation of the riser. The packer was positioned at 3 depths (50, 65 and 80 feet below the top of the casing) for evaluation purposes. At each of the target depths, the packer assembly was installed to depth and then inflated thus creating an isolated zone above the well screen. Utilizing a submersible pump approximately 19 gallons of water was purged from above the packer. Water level readings were monitored for a period of 30 minutes. No significant changes in water level readings were observed at the 50 ft. and 65 ft. depths while a slight change (0.18-feet) was observed at the 80 ft. depth. This data could not be reproduced and therefore the results were found to be inconclusive. As such, additional methods of investigation were employed in an effort to locate the source of the contamination found in OW2-1.

On July 15, 2008, a temporary sampling location (EP-1) was installed using direct push methods (Earthprobe®) to facilitate the collection of groundwater samples. A total of 10 discrete sampling points were advanced and began approximately 2-feet below the water table, at 20-feet below grade surface (BGS), and proceeded at 5-foot spaced interval until a depth of 65-feet, where drilling conditions prevented additional advancement of the sampling rods. Samples were collected after purging the standing water in the rod a minimum of 4 standing water volumes. Groundwater samples were screened in the field using a water quality probe with flow thru cell (YSI 556 or similar) for temperature, pH, dissolved oxygen, conductivity and ORP. The samples were analyzed on-site by a mobile laboratory equipped with a GC/MS and 1 sample was submitted to H2M Labs, Inc for analysis via EPA 524.2 and fuel oxygenates via a modified EPA Method 8260. Samples were also collected from each discrete sampling depth and submitted to H2M Labs, Inc for dissolved oxygen (titrated in the field via Winkler fixation Method), nitrate, sulfate, dissolved iron (filtered in the field) and total iron and manganese. Analytical results are presented in Tables 10-12. Benzene and MTBE were reported at non-detectable concentrations for all discrete sampling depths in EP-1.

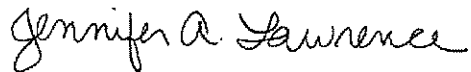
Due to depth limitation with the direct push sampling methods, investigation activities continued with the installation of multi-level monitoring wells via hollow stem auger drilling techniques. On July 17, 2008 ML-4 was installed eighteen-feet east of OW-2. ML-4 was sampled within 24-hrs of installation and contamination was reported. Subsequently, ML-5 and ML-6 were installed in an effort to delineate the horizontal and vertical extent of the contamination.

The ML wells contain 11 individual sampling points spaced at five-foot intervals; ML-4 and ML-5 are screened from 70-feet down to 120-feet BGS and ML-6 is nested next to ML-4 and is screened from 125-feet down to 175-feet BGS (see Figure 5 for well locations). For each of these wells, 10 sample points are constructed of ½-inch diameter schedule 40 PVC riser and a 1-foot section of ½-inch diameter, 0.020" slotted PVC screen. The central risers are constructed of 1.5-inch diameter schedule 40 PVC riser with a 1-foot section of 1.5-inch diameter, 0.020" slotted PVC screen. Soil samples were collected at grade to the end of boring from auger cuttings and posthole samples from each boring during installation. Upon collection, each sample was logged for lithology and screened for volatile organic compounds with a Photo-Ionization Detector (PID) by an on-site geologist, and stored in labeled zip lock bags. Prior to utilizing the PID, the PID was calibrated using a 100 ppm isobutylene standard and ambient air. Drilling logs for the wells are included in Appendix C and provide a description of the soil lithology and well construction.

Groundwater samples collected from ML-4, ML-5 and ML-6 (select samples) were analyzed on-site by a mobile laboratory equipped with a GC/MS. Groundwater samples were screened in the field using a water quality probe with flow thru cell (YSI 556 or similar) for temperature, pH, dissolved oxygen, conductivity and ORP. Select samples were submitted to H2M Labs, Inc for analysis via EPA 524.2 and fuel oxygenates via a modified EPA Method 8260. Samples were collected from each discrete sampling depth and submitted to H2M Labs, Inc for dissolved oxygen (titrated in the field via Winkler fixation Method), nitrate, sulfate, dissolved iron (filtered in the field) and total iron and manganese. ML-4, ML-5 and ML-6 were sampled again two weeks after installation. Groundwater samples were submitted to H2M Labs, Inc for analysis via EPA 524.2 and fuel oxygenates via a modified EPA Method 8260. Analytical results are presented in Tables 13-15.

A contaminant plume consisting primarily of benzene and mixed fuel oxygenates (MTBE, TBA, TAA and DIPE) was identified at depths ranging from 70-175-feet BGS in ML-4, ML-5 and ML-6. To assist in the evaluation of the data, cross-sections with benzene, MTBE and TBA concentrations posted are presented as Figure 6 -8 (maximum analytical results per location). The data obtained from OW2-1 is inconsistent with groundwater data obtained from the deep ML wells (ML-1, ML-2 and ML-3) at similar depths. Decreasing concentration trends observed as purging increased during the initial sampling (July 2007) of OW2-1, combined with the fact that significant concentrations were not found in the deep ML wells support the conclusion that OW2-1 well construction is suspect. OW2-1 appears to be acting as a conduit for the contaminant plume found at shallower depths (75-175'BGS) to impact the deeper screened depths of OW2-1.

Sincerely,



Jennifer A. Lawrence  
Senior Project Manager

Enclosed (26)

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## TABLES

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Gloria Road and Harriet Road  
 Bethpage, NY  
 Spill # 07-50455



Groundwater Analytical Results  
 EAR Field Screening

Location	Date Collected	Time Collected	Parameter				
			Conductivity (uS)	Dissolved Oxygen (mg/L)	ORP (mv)	pH	Temperature (C)
OW2-1	07/06/07	1:05 PM	273	1.5	-	6.5	14.7
OW2-1	07/06/07	1:10 PM	236	0.51	-	5.61	14.7
OW2-1	07/06/07	1:20 PM	206	0.81	-	5.26	14.3
OW2-1	07/06/07	1:25 PM	206	0.68	-	5.22	14.5
OW2-1	07/06/07	1:30 PM	205	1.76	-	5.16	14.2
OW2-1	07/06/07	1:45 PM	203	0.64	-	5.16	13.9
OW2-1	07/06/07	2:00 PM	203	3.21	-	5.16	13.9
OW2-1	07/06/07	2:15 PM	203	0.44	-	5.14	13.8
OW2-1	07/06/07	2:30 PM	202	0.38	-	5.09	13.8
OW2-1	07/06/07	2:45 PM	201	0.28	-	5.14	13.7
OW2-1	07/06/07	3:00 PM	180	0.23	-	3.32	13
OW2-1	07/06/07	3:30 PM	152	1.85	-	5.19	14.2
OW2-1	07/06/07	3:45 PM	136	0.41	-	5.2	13
OW2-1	07/06/07	4:00 PM	128	0.18	-	5.24	12.9
OW2-1	07/06/07	4:15 PM	117	0.16	-	5.31	12.6
OW2-1	07/06/07	4:30 PM	111	0.14	-	5.23	12.4
OW2-1	07/06/07	4:45 PM	107	0.25	-	5.16	12.3
OW2-1	07/06/07	4:48 PM	105	0.18	-	5.16	12.3
OW2-1	07/09/07	2:55 PM	109	1.72	129	4.31	28.8
OW2-1	07/09/07	3:00 PM	110	1.6	129	4.34	29.3
OW2-1	07/09/07	3:05 PM	111	1.38	124.5	4.35	29.9
OW2-1	07/09/07	3:10 PM	113	1.28	117.1	4.39	30.4
OW2-1	07/09/07	3:15 PM	107	1.67	121	4.2	13.1
OW2-1	07/09/07	3:20 PM	103	0.33	105.8	4.68	13.3
OW2-1	07/09/07	3:40 PM	99	1.24	109.6	4.49	12.9
OW2-1	07/09/07	3:55 PM	96	0.35	110	4.63	12.7
OW2-1	07/09/07	4:10 PM	94	0.28	84.4	4.74	12.7
OW2-1	07/09/07	4:25 PM	94	0.27	83.7	4.47	12.7
OW2-1	07/09/07	4:40 PM	93	0.21	88.1	4.47	13.1
OW2-1	07/09/07	4:55 PM	94	0.31	79.3	4.48	12.8
OW2-1	07/09/07	5:10 PM	95	0.33	95.6	4.41	12.9
OW2-1	07/09/07	5:25 PM	95	0.28	88.3	4.38	13
OW2-1	07/09/07	5:40 PM	96	0.27	85.7	4.36	12.7
OW2-2	07/09/07	11:44 AM	201	1.25	58.6	5.48	14.2
OW2-2	07/09/07	11:50 AM	200	0.17	60.2	4.97	13.7
OW2-2	07/09/07	11:55 AM	194	0.85	87.4	4.74	12.7
OW2-2	07/09/07	12:00 PM	91	0.57	120.5	4.28	12
OW2-2	07/09/07	12:05 PM	90	0.47	193	4.16	11.7
OW2-2	07/09/07	12:10 PM	91	0.28	220.9	4.12	11.7
OW2-2	07/09/07	12:15 PM	91	0.27	237.6	4.09	11.7
OW2-2	07/09/07	12:20 PM	92	0.23	256.9	4.06	11.7
OW2-2	07/09/07	12:35 PM	93	0.61	233.2	4.2	11.7
OW2-2	07/09/07	12:50 PM	93	0.23	184.4	4.4	12.4
OW2-2	07/09/07	1:05 PM	92	0.32	166.2	5.5	11.9
OW2-2	07/09/07	1:30 PM	94	1.89	132.5	4.68	18.1

TABLE 1





Claris Road and Hurrier Road  
 Beshaps, NY  
 Spill # 07-0455

Groundwater Analytical Results (ug/L)  
 Eastern Laboratories

Location	Date Collected	Total Coliforms	1-11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60						
SW2-1	7/6/2007 1:00 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
SW2-1	7/6/2007 1:10 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
SW2-1	7/6/2007 1:15 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
SW2-1	7/6/2007 1:15 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
SW2-2	7/6/2007 1:40 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
SW2-2	7/6/2007 1:40 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
SW2-2	7/6/2007 1:40 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
SW2-2	7/6/2007 1:40 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SW2-2	7/6/2007 1:40 PM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

TABLE 3



Gloria Road and Harriet Road  
 Bethpage, NY  
 Spill # 07-50455



**Groundwater Analytical Results (ug/L)**

Microseps, Inc.

Location	Date Collected	Time Collected	Parameter							
			Diisopropyl Ether	Ethanol	Ethyl-Tert-Butyl-Ether	n-Butylmethylether	Tert amyl ethyl ether	Tert-Amyl Alcohol	Tert-Amyl-Methyl-Ether	Tert-Butyl Alcohol
OW2-1	7/6/2007	4:55 PM	<1	<25	<1	6.8	<1	<1	<1	<5
OW2-2	7/9/2007	1:30 PM	<1	<25	<1	<0.5	<1	<1	<1	<5

**Groundwater Analytical Results (ug/L)**

H2M Labs, Inc.

Location	Date Collected	Time Collected	Parameter
			1,2-Dibromoethane
OW2-1	7/6/2007	4:55 PM	0.23
OW2-2	7/9/2007	1:30 PM	<0.02

**Groundwater Analytical Results (ug/L)**

Bodycote Testing Group

Location	Date Collected	Time Collected	Parameter
			1,4-Dioxane
OW2-1	7/6/2007	4:55 PM	<1
OW2-2	7/9/2007	1:30 PM	<1

**TABLE 4**

Gloria Road and Harriet Road  
Bethpage, NY  
Spill # 07-50455



Groundwater Analytical Results  
EAR Field Screening

Location	Date Collected	Time Collected	Parameter				
			Conductivity (uS)	Dissolved Oxygen (mg/L)	ORP (mv)	pH	Temperature (C)
ML-1A	10/12/2007	6:03 PM	602	0.63	-59	8	16.5
ML-1A	10/15/2007	3:33 PM	360	0.59	-287	7.1	16.6
ML-1A	10/23/2007	12:35 PM	344	0.82	-216	6.55	17.8
ML-1B	10/12/2007	5:40 PM	541	8.88	-54	9.09	16.9
ML-1B	10/15/2007	2:17 PM	1596	0.07	-202	9.95	16.6
ML-1B	10/23/2007	12:20 PM	1439	0.27	-138	8.59	17.7
ML-1C	10/12/2007	5:55 PM	839	4.76	-82	8.2	16.8
ML-1C	10/15/2007	2:25 PM	561	0.11	-252	8.45	16.5
ML-1C	10/23/2007	1:21 PM	413	0.05	140	7.57	18.2
ML-1D	10/12/2007	4:50 PM	499	1.08	-57	9.12	16.7
ML-1D	10/15/2007	3:20 PM	261	0.34	-282	7.07	16
ML-1D	10/23/2007	12:42 PM	236	0.79	-148	5.89	17.6
ML-1E	10/12/2007	4:37 PM	378	3.35	-59	8.57	17.1
ML-1E	10/15/2007	5:27 PM	247	0.99	-238	6.16	16.5
ML-1E	10/23/2007	3:25 PM	230	1.18	-157	5.24	16.7
ML-1F	10/12/2007	3:07 PM	2894	8.73	-64	10.15	17.2
ML-1F	10/15/2007	5:35 PM	322	0.72	-268	6.51	15.9
ML-1F	10/23/2007	2:11 PM	251	1.6	-151	5.47	18.5
ML-1G	10/12/2007	3:41 PM	418	0.85	-66	7.76	17
ML-1G	10/16/2007	11:16 AM	347	0.71	-270	7.79	16.2
ML-1G	10/23/2007	4:00 PM	269	0.57	-224	6.28	16.3
ML-1H	10/12/2007	3:53 PM	731	0.07	-128	7.4	17.1
ML-1H	10/16/2007	11:07 AM	1126	1.26	-268	9.43	16.5
ML-1H	10/23/2007	3:50 PM	541	0.02	-293	7.79	18
ML-1I	10/12/2007	3:19 PM	501	3.5	-42	8.48	16.9
ML-1I	10/16/2007	11:29 AM	451	0.36	-316	8.19	16.2
ML-1I	10/23/2007	5:12 PM	512	0.08	-296	7.93	16.3
ML-1J	10/12/2007	3:33 PM	550	6.51	-68	8.18	16.6
ML-1J	10/16/2007	1:30 PM	311	1.03	-193	6.84	16.9
ML-1J	10/23/2007	5:43 PM	225	0.36	152	5.95	15.9
ML-1K	10/12/2007	1:57 PM	535	0.5	-88	7.77	17.7
ML-1K	10/16/2007	1:50 PM	357	0.57	-246	6.97	17
ML-1K	10/23/2007	5:52 PM	299	0.35	-180	6.29	16
ML-1L	10/12/2007	6:25 PM	419	2.33	-49	8.21	16.2
ML-2A	10/23/2007	6:06 PM	951	<0.1	-239	9.61	18.6
ML-2B	10/23/2007	6:10 PM	471	-0.01	-257	8.45	18.5
ML-2C	10/23/2007	6:17 PM	1505	0.03	-239	9.4	18.7
ML-2D	10/23/2007	6:23 PM	314	0.03	-252	7.57	18.9
ML-2E	10/24/2007	9:15 AM	280	0.4	-304	6.88	17.5
ML-2F	10/24/2007	10:03 AM	210	<0.1	-319	6.25	17.5
ML-2G	10/24/2007	1:00 PM	278	0.44	-220	5.3	17.2
ML-2H	10/24/2007	1:15 PM	244	0.17	-242	5.84	16.7
ML-2I	10/24/2007	1:30 PM	244	0.03	-423	7.21	16.6
ML-2J	10/24/2007	11:20 AM	138	0.06	-218	5.72	17.2
ML-2K	10/24/2007	10:47 AM	147	0.2	-255	5.81	17.2
ML-2L	10/24/2007	4:05 PM	85	0.16	-147	5.38	16.7
ML-3A	11/1/2007	1:50 PM	406	0.73	-292	7.01	16.6
ML-3B	11/1/2007	2:01 PM	338	0.95	-252	6.63	16.7
ML-3C	11/1/2007	2:56 PM	298	0.92	-293	6.6	16.3
ML-3D	11/1/2007	3:37 PM	257	0.56	-179	6.32	16.1
ML-3E	11/2/2007	12:13 PM	247	1.56	-130	6.34	15.1
ML-3F	11/2/2007	12:34 PM	301	0.82	-187	6.66	15.1
ML-3G	11/1/2007	3:30 PM	221	0.22	-190	6.38	16.2
ML-3H	11/1/2007	3:10 PM	305	0.46	-212	6.46	16.2
ML-3I	11/2/2007	2:02 PM	327	0.86	-163	6.63	15.3
ML-3J	11/2/2007	1:04 PM	348	0.67	-165	6.59	15.5
ML-3K	11/2/2007	1:48 PM	308	0.74	-153	6.63	15.2
ML-3L	11/2/2007	11:55 AM	227	0.88	-222	6.63	14

TABLE 5





Gloria Road and Harriet Road  
Bethpage, NY  
Spill # 07-50455



Groundwater Analytical Results  
EAR Field Screening

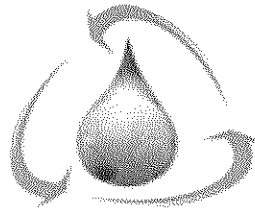
Location	Depth	Date Collected	Time Collected	Parameter				
				Conductivity (uS)	Dissolved Oxygen (mg/L)	ORP (Oxidation Reduction Potential) mV	pH	Temperature (C)
ML-1G	316-321	6/25/2008	10:04 AM	300	1	303	8.89	16.35
ML-1H	331-336	6/25/2008	11:35 AM	545	0.55	-177.9	8.43	18.8
ML-1I	346-351	6/25/2008	2:01 PM	335	0.38	-117.3	7.97	18.33
ML-1J	361-366	6/26/2008	11:46 AM	204	114	130	5.61	16.62
ML-1K	376-381	6/26/2008	10:43 AM	260	0.65	240.1	7.11	17.24
ML-2A	228-233	6/30/2008	10:15 AM	624	1.85	-4.7	10.26	17.06
ML-2B	243-248	6/30/2008	10:58 AM	847	0.93	-70.5	10.68	18.68
ML-2C	258-263	6/30/2008	11:36 AM	686	0.49	-53.2	10.88	17.58
ML-2D	273-278	6/30/2008	12:30 PM	244	0.52	-124.9	7.11	16.79
ML-2E	288-293	6/30/2008	1:05 PM	312	0.75	-178.4	7.3	17.35
ML-2F	303-308	6/30/2008	1:37 PM	317	0.75	-49	6.33	17.55
ML-2G	318-323	6/30/2008	2:30 PM	259	0.93	64.7	5.53	17.8
ML-2H	333-338	6/30/2008	2:51 PM	228	0.63	-36.9	6.04	18.76
ML-2I	348-353	7/1/2008	10:57 AM	293	1.09	-100.5	9.68	25.09
ML-2J	363-368	7/1/2008	11:54 AM	102	0.65	-42.2	5.86	18.82
ML-2K	378-383	7/1/2008	12:12 PM	81	0.72	-18.3	6.07	17.72
ML-2L	393-398	7/1/2008	2:25 PM	97	0.9	-20.8	5.88	18.18
ML-3A	228-233	6/26/2008	1:05 PM	3,800	0.62	-167.4	12.65	16.87
ML-3B	243-248	6/26/2008	1:44 PM	201	0.92	11.6	5.58	16.31
ML-3C	258-263	6/26/2008	2:57 PM	306	1.1	-177.9	7.07	15.97
ML-3D	273-278	6/26/2008	3:07 PM	245	0.58	118	6.33	16.85
ML-3E	288-293	6/26/2008	3:20 PM	233	0.79	67.9	5.59	16.99
ML-3F	303-308	6/27/2008	10:51 AM	316	1.67	158.8	6.64	18.76
ML-3G	318-323	6/27/2008	11:18 AM	159	2.75	-116.9	5.5	15.91
ML-3H	333-338	6/27/2008	12:06 PM	231	2.58	-106.6	5.57	16.09
ML-3I	348-353	6/27/2008	1:14 PM	230	2.4	-108.7	5.77	17.93
ML-3J	363-368	6/27/2008	2:15 PM	241	1.87	-65.3	6.08	16.51
ML-3K	378-383	6/27/2008	2:42 PM	190	1.45	-83.5	6.08	16.45
ML-3L	393-398	6/30/2008	12:11 PM	295	0.64	-128.4	9.36	15.57
OW2-1@355ft		7/3/2008	2:36 PM	151	1.3	206.7	4.5	18.97
OW2-1@360ft		7/3/2008	1:40 PM	144	1.2	180.1	4.52	20.42
OW2-1@370ft		6/26/2008	3:05 PM	199	0.34	113.2	4.91	241.3
OW2-1@375ft		6/26/2008	12:50 PM	194	0.56	148.9	4.67	21.25
OW2-1@380ft		6/26/2008	11:10 AM	103	1	145.2	4.24	20.62
OW2-1@385ft		6/25/2008	12:16 PM	201	1.24	88.9	4.81	23.06
OW2-1@390ft		6/25/2008	10:53 AM	224	2.42	30.4	5.09	25.33

TABLE 8





Gloria Road and Harriet Road  
 Bethpage, NY  
 Spill # 07-50455



Groundwater Analytical Results  
 EAR Field Screening

Location	Date Collected	Time Collected	Parameter				
			Conductivity (uS)	Dissolved Oxygen (mg/L)	ORP (mv)	pH	Temperature (C)
EP-1A	7/15/2008	8:59 AM	585	6.38	103.9	5.83	17.99
EP-1B	7/15/2008	9:50 AM	465	5.95	121.2	5.45	17.02
EP-1C	7/15/2008	10:22 AM	462	6.3	145.2	5.31	17.01
EP-1D	7/15/2008	10:50 AM	461	6.61	151.4	5.29	16.77
EP-1E	7/15/2008	11:20 AM	399	6.28	188.4	4.98	16.7
EP-1F	7/15/2008	11:43 AM	373	5.92	164.4	5.12	17.03
EP-1G	7/15/2008	12:07 PM	477	3.88	175.4	5	17.11
EP-1H	7/15/2008	1:00 PM	777	0.89	145.2	5.13	16.4
EP-1I	7/15/2008	1:47 PM	689	0.44	61.5	5.61	17.55
EP-1J	7/15/2008	2:55 PM	696	0.15	-112.6	6.4	26.15

TABLE 10







Clinta Bawg and Harriet Koid  
 Belpaire, NY  
 Spill # 07-0045

Groundwater Analytical Results (ug/L unless noted otherwise)  
 8385 (4/04), etc.

Sample ID	Date	Time	Parameter	Result	Unit	Notes
EP-1B	7/15/2008	8:30 AM	Chloride	11,000	mg/L	
EP-1C	7/15/2008	10:22 AM	Chloride	11,000	mg/L	
EP-1D	7/15/2008	11:50 AM	Chloride	11,000	mg/L	
EP-1E	7/15/2008	11:43 AM	Chloride	11,000	mg/L	
EP-1F	7/15/2008	12:07 PM	Chloride	11,000	mg/L	
EP-1G	7/15/2008	1:27 PM	Chloride	11,000	mg/L	
EP-1H	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1I	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1J	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1K	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1L	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1M	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1N	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1O	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1P	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1Q	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1R	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1S	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1T	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1U	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1V	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1W	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1X	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1Y	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-1Z	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2A	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2B	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2C	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2D	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2E	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2F	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2G	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2H	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2I	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2J	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2K	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2L	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2M	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2N	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2O	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2P	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2Q	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2R	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2S	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2T	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2U	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2V	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2W	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2X	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2Y	7/15/2008	2:34 PM	Chloride	11,000	mg/L	
EP-2Z	7/15/2008	2:34 PM	Chloride	11,000	mg/L	

TABLE 12

Gloria Road and Harriet Road  
Bethpage, NY  
Spill # 07-50455



Groundwater Analytical Results  
EAR Field Screening

Location Depth	Date Collected	Time Collected	Parameter				
			Conductivity (µS)	Dissolved Oxygen (mg/L)	ORP (Oxidation Reduction Potential) (mv)	pH	Temperature (C)
ML-4A 69-70	7/18/2008	10:00 AM	503	0.78	-37.7	7.98	16.79
ML-4A 69-70	8/6/2008	10:37 AM	0.511	0.98	17.2	5.42	16.31
ML-4B 74-75	7/18/2008	10:25 AM	507	0.44	-70.2	6.91	16.95
ML-4B 74-75	8/6/2008	11:03 AM	0.672	3.27	-25.6	5.21	16.74
ML-4C 79-80	7/18/2008	10:50 AM	431	1.03	-130.9	8.46	16.99
ML-4C 79-80	8/6/2008	11:33 AM	0.471	2.53	30.3	5.37	16.7
ML-4D 84-85	7/18/2008	11:00 AM	357	0.43	-77.2	8.22	16.14
ML-4D 84-85	8/6/2008	11:48 AM	0.376	0.81	24.3	4.98	16.21
ML-4E 89-90	7/18/2008	11:35 AM	411	2.05	-68.2	7.9	15.97
ML-4E 89-90	8/6/2008	12:20 PM	0.482	0.62	39	5.01	16.65
ML-4F 94-95	7/18/2008	11:50 AM	367	1.79	-37.4	7.06	16.14
ML-4F 94-95	8/6/2008	12:40 PM	0.393	0.47	20.4	5.27	16.76
ML-4G 99-100	7/18/2008	12:22 PM	351	0.53	-69.5	8.07	15.53
ML-4G 99-100	8/6/2008	1:05 PM	0.392	0.44	27.1	5.08	16.16
ML-4H 104-105	7/18/2008	12:32 PM	339	1	-93.8	7.49	16.09
ML-4H 104-105	8/6/2008	1:45 PM	0.347	5.7	57.3	5.3	16.82
ML-4I 109-110	7/18/2008	1:20 PM	327	2.57	-61.2	7.82	16.67
ML-4I 109-110	8/6/2008	3:07 PM	0.339	8.45	54.4	5.47	17.95
ML-4J 114-115	7/18/2008	1:45 PM	270	0.77	-91.4	7.91	15.71
ML-4J 114-115	8/6/2008	2:35 PM	0.313	0.45	33.7	5.24	16.21
ML-4K 119-120	8/6/2008	2:52 PM	0.238	0.26	21.3	5.17	18.1
ML-5A 69-70	7/22/2008	10:31 AM	498	1.02	-216.2	8.89	17.87
ML-5A 69-70	8/11/2008	10:50 AM	603	8.09	80.4	5.57	18.57
ML-5B 74-75	7/22/2008	11:01 AM	454	1	-192.9	8.83	16.35
ML-5B 74-75	8/11/2008	10:21 AM	450	0.9	93.7	4.49	15.76
ML-5C 79-80	7/22/2008	11:41 AM	405	1.18	-191.8	8.99	17.88
ML-5C 79-80	8/11/2008	11:27 AM	475	8.56	97	5.04	18.95
ML-5D 84-85	7/22/2008	12:06 PM	373	1.66	-174.2	9.29	16.71
ML-5D 84-85	8/11/2008	11:52 AM	358	1.92	101.9	4.48	15.86
ML-5E 89-90	7/22/2008	12:30 PM	351	1.99	-187.9	9.41	16.55
ML-5E 89-90	8/11/2008	12:12 PM	372	0.85	77.3	4.83	15.82
ML-5F 94-95	7/22/2008	12:52 PM	367	0.89	-180.2	9.17	16.31
ML-5F 94-95	8/11/2008	12:34 PM	420	0.77	118.5	4.31	15.36
ML-5G 99-100	7/22/2008	1:25 PM	299	1	-184.2	9.3	16.82
ML-5G 99-100	8/11/2008	1:03 PM	352	5.16	18.1	5.1	15.57
ML-5H 104-105	7/22/2008	1:50 PM	295	1.45	-169	8.99	16.94
ML-5H 104-105	8/11/2008	1:44 PM	307	7.3	115	5.06	16.21
ML-5I 109-110	7/22/2008	2:19 PM	324	2.8	-152.6	8.9	16.66
ML-5I 109-110	8/11/2008	2:27 PM	276	6.97	99.5	5.38	16.52
ML-5J 114-115	7/22/2008	2:37 PM	237	1.44	-167.2	8.76	18.49
ML-5J 114-115	8/11/2008	2:39 PM	230	0.32	79.7	5.18	15.67
ML-5K 119-120	7/22/2008	1:05 PM	249	1	-172.1	8.99	16.37
ML-5K 119-120	8/11/2008	1:22 PM	239	0.22	103.2	4.68	15.9
ML-6A 124-125	7/23/2008	2:33 PM	338	1.44	-108.8	5.62	24.82
ML-6A 124-125	8/12/2008	11:06 AM	0.257	0.43	105.7	5.27	18.36
ML-6A 129-130	7/23/2008	2:50 PM	425	1.37	-119.6	6.11	25.03
ML-6B 129-130	8/12/2008	11:45 AM	0.238	0.57	146.3	4.89	16.88
ML-6C 134-135	7/23/2008	3:28 PM	331	1.45	-125.2	6.07	22.27
ML-6C 134-135	8/12/2008	12:37 PM	0.254	0.7	127.4	5.21	16.46
ML-6D 139-140	7/23/2008	3:44 PM	335	1.54	-133.8	6.22	21.11
ML-6D 139-140	8/12/2008	1:41 PM	0.323	1.09	127.5	5.33	19.26
ML-6E 144-145	7/24/2008	10:40 AM	238	1.13	-173	5.64	18.74
ML-6E 144-145	8/12/2008	3:02 PM	0.17	1.1	117.7	5.24	17.97
ML-6F 149-150	7/24/2008	11:15 AM	281	2.19	-127.8	5.76	20.3
ML-6F 149-150	8/12/2008	3:32 PM	0.328	3.13	112.7	5.5	19.41
ML-6G 154-155	7/24/2008	10:08 AM	269	2.12	-130	5.35	16.9
ML-6G 154-155	8/13/2008	10:10 AM	251	2.03	131.1	4.98	15.9
ML-6H 159-160	7/24/2008	12:50 PM	315	1.26	-166.2	5.77	17.22
ML-6H 159-160	8/13/2008	10:34 AM	278	1.04	125.3	5.17	15.65
ML-6I 164-165	7/24/2008	1:10 PM	340	1.15	-154.3	5.73	19.19
ML-6I 164-165	8/13/2008	12:12 PM	288	1.17	105.6	5.16	16.54
ML-6J 169-170	7/24/2008	1:25 PM	368	2.88	-116.5	5.97	18
ML-6J 169-170	8/13/2008	12:40 PM	281	1.67	115.1	5.23	18.37
ML-6K 174-175	7/23/2008	1:15 PM	253	3.38	-64.1	5.4	17.02
ML-6K 174-175	8/13/2008	2:40 PM	237	3.13	189.3	4.15	15.49

TABLE 13





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## FIGURES

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FIGURE 1

Area Location Map



**FIGURE 2**

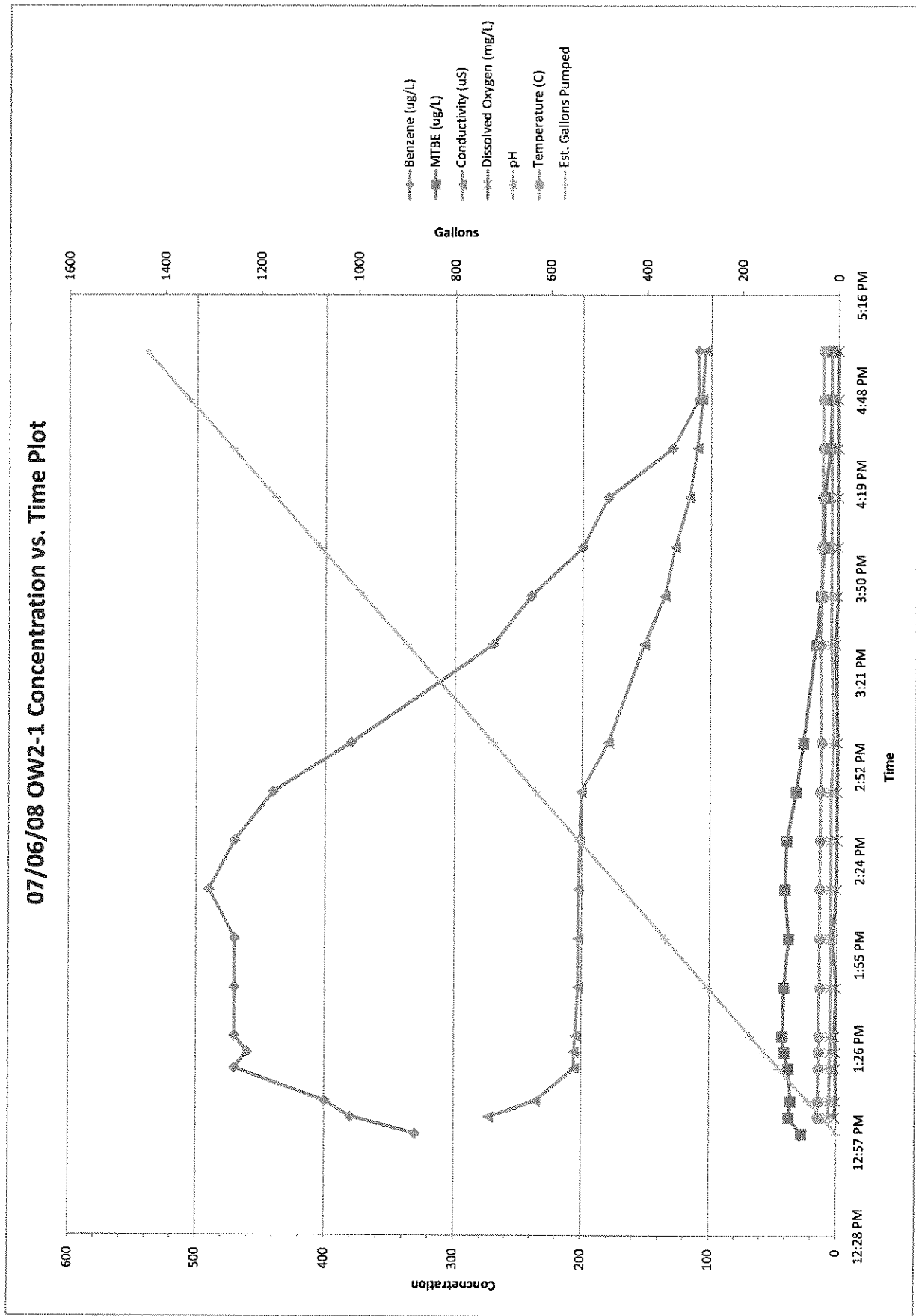


FIGURE 3

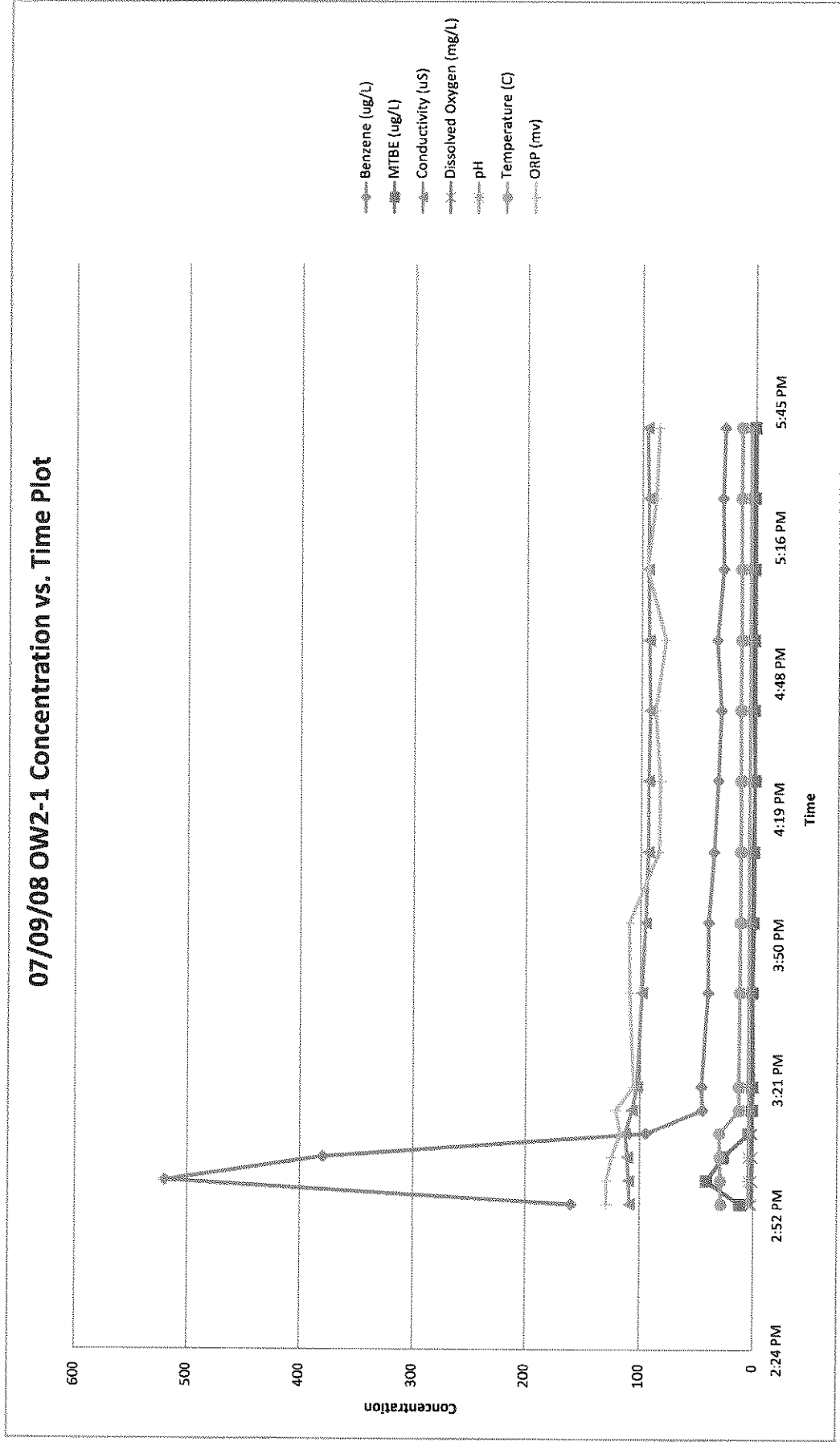




FIGURE 4

Change in Head Pressure vs time for OW2-1 and OW2-2

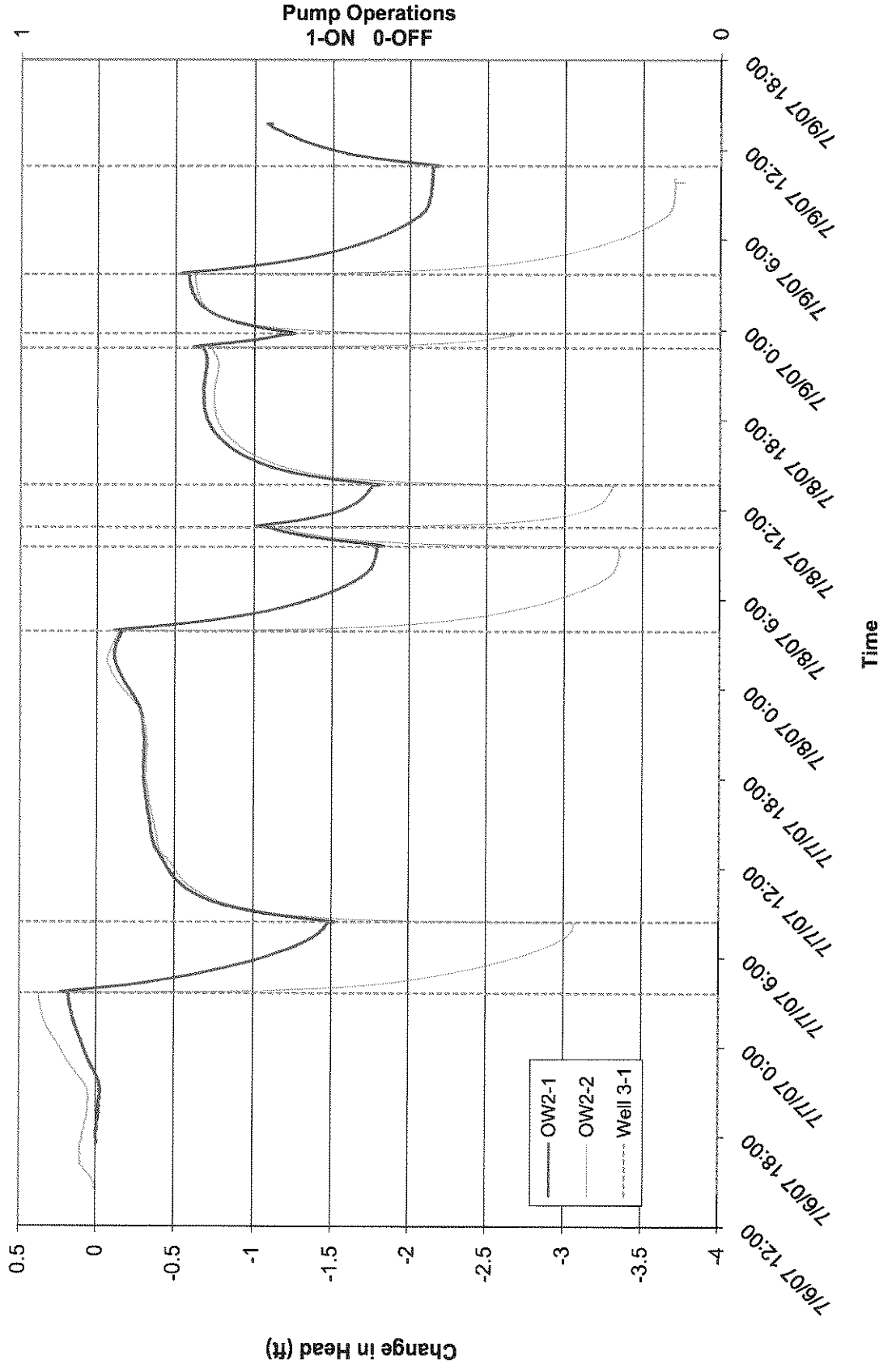


FIGURE 5

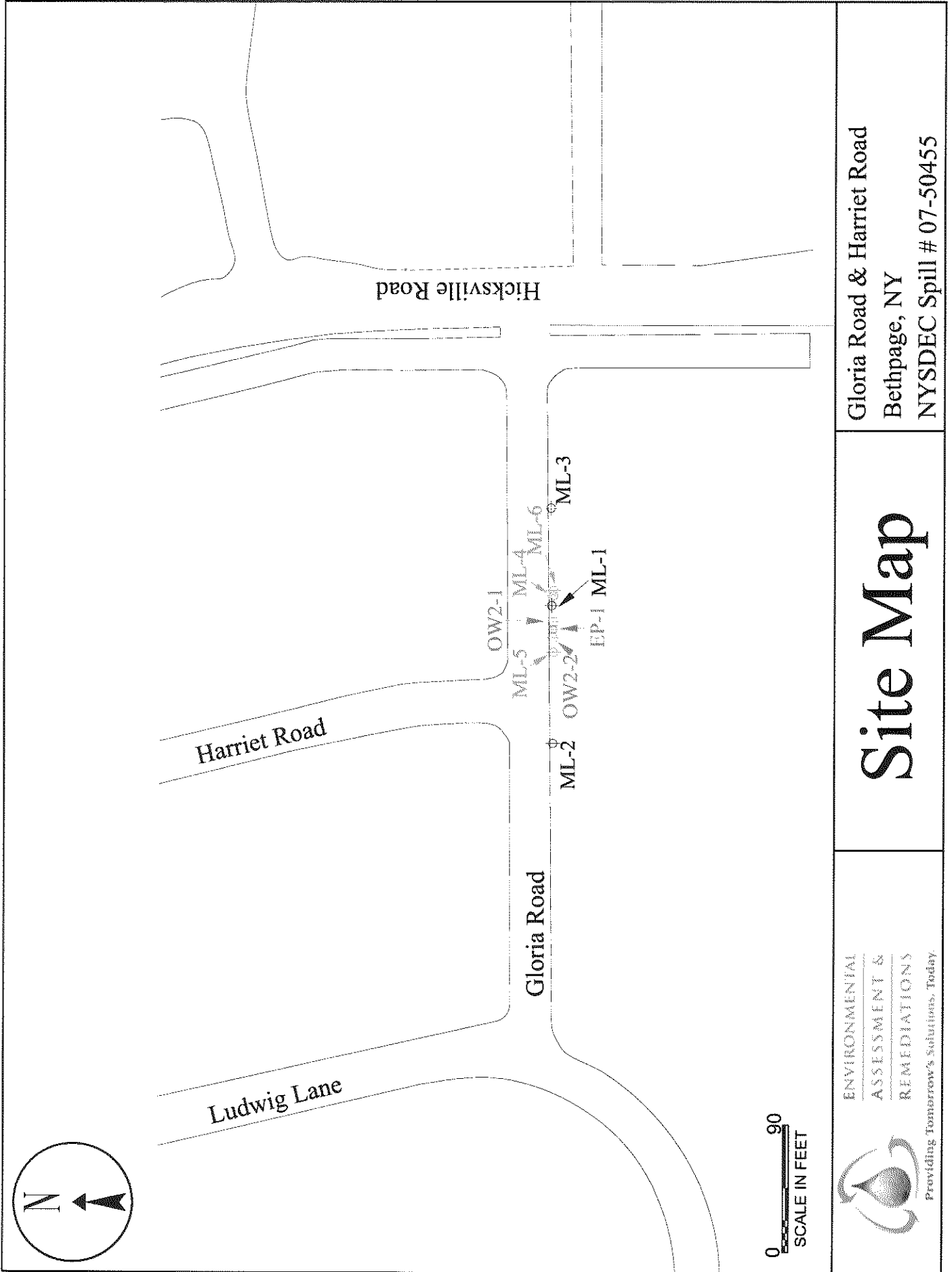


FIGURE 6



ENVIRONMENTAL  
ASSESSMENT &  
REMEDIATION

Providing Tomorrow's Solutions, Today.

Gloria Road & Harriet Road  
Bethpage, NY  
NYSDEC Spill # 07-50455

Maximum Concentration Reported  
7/6/07-8/13/08

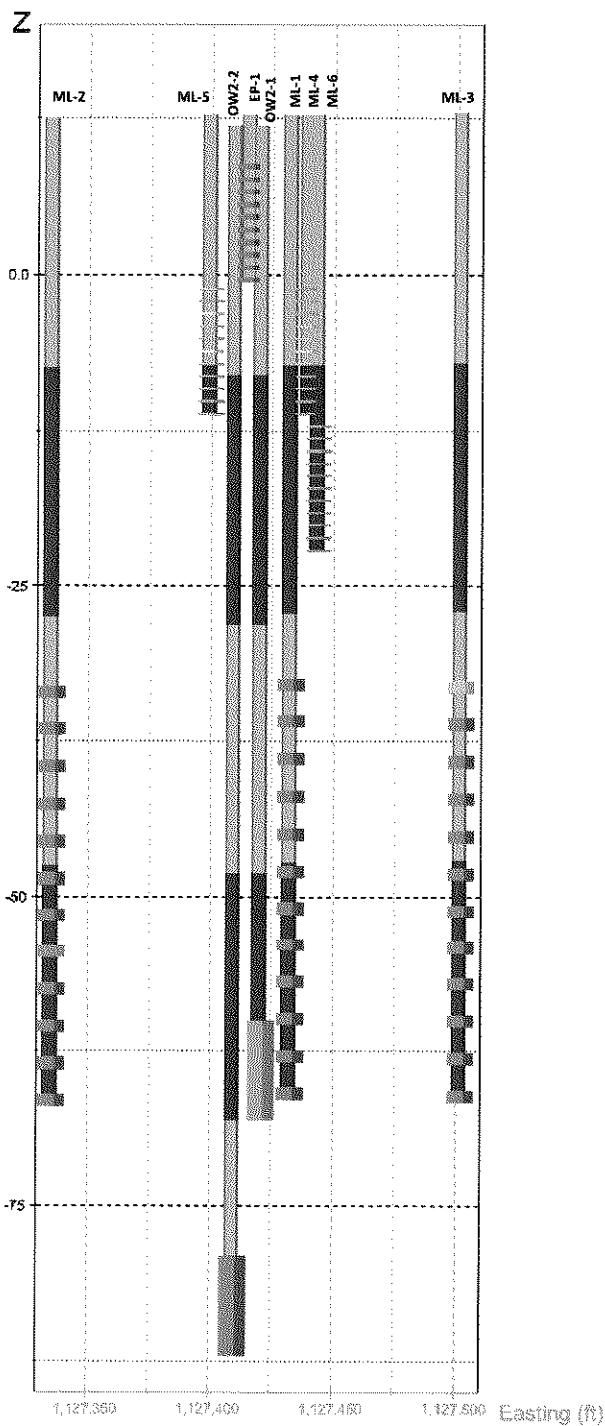
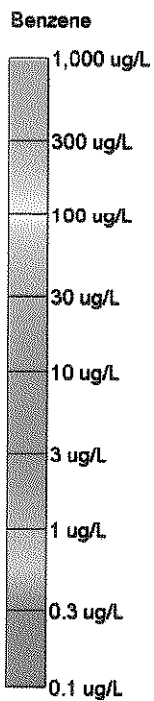


FIGURE 7



ENVIRONMENTAL  
ASSESSMENT &  
REMEDIATION

Providing Tomorrow's Solutions, Today.

Gloria Road & Harriet Road  
Bethpage, NY  
NYSDEC Spill # 07-50455

Maximum Concentration Reported  
7/6/07-8/13/08

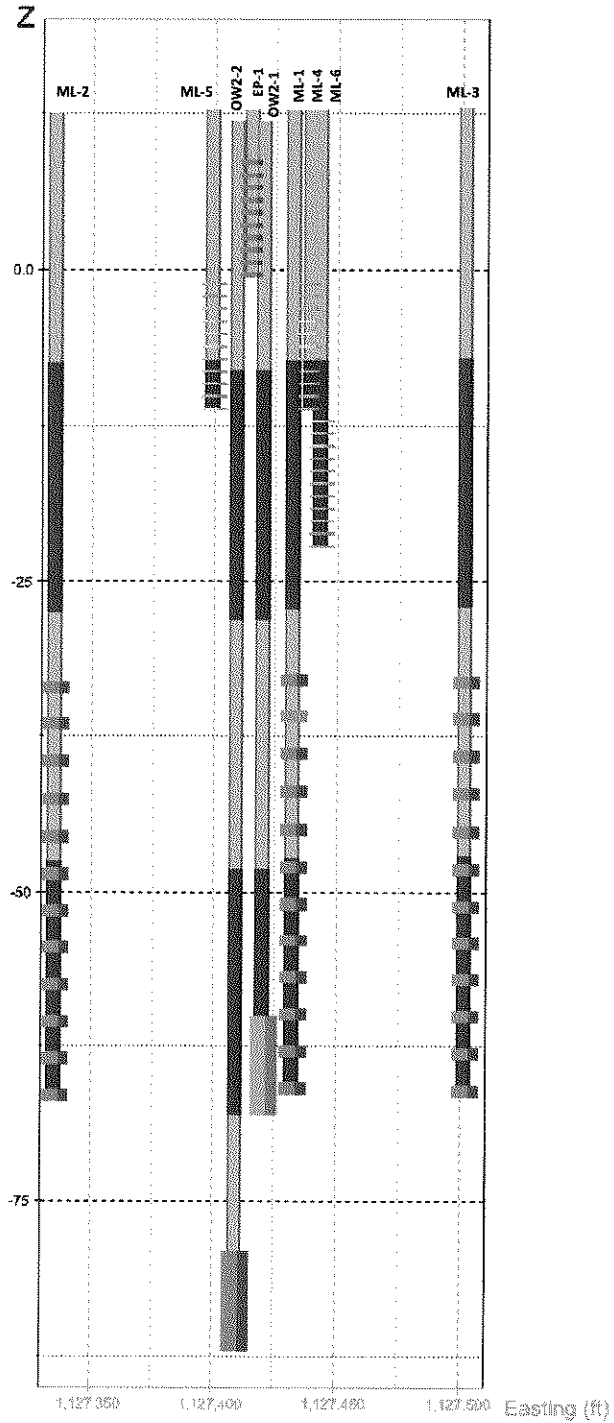
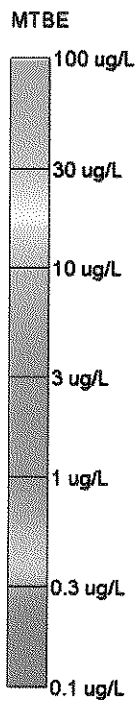


FIGURE 8



ENVIRONMENTAL  
ASSESSMENT &  
REMEDIATIONS

Providing Tomorrow's Solutions, Today.

Gloria Road & Harriet Road  
Bethpage, NY  
NYSDEC Spill # 07-50455

Maximum Concentration Reported  
7/6/07-8/13/08

Tert-Butyl\_Alcohol

