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Mr. Bruce R. Terbush, P.E.
NYSDEC
Bureau of Radiation & Hazardous Site Management
Division of Solid & Hazardous Materials
625 Broadway
Albany, New York 12233-7252

Re: Additional Investigation/IRM Activities – Former Allied Specialty Chemical Site, Tonawanda, New York

File: 1163/26080 #2

Dear Mr. Terbush:

This letter serves to transmit and summarize data generated pursuant to the implementation of the Additional Investigation and Interim Remedial Measures Work Plan (Work Plan) dated May 2000 for the former Allied Specialty Chemical site (the Site) located in Tonawanda, New York. Work tasks completed under the Work Plan included the following: storm sewer evaluation, ground water monitoring well installations, and ground water, storm water, and sediment sampling. The various work tasks presented in the Work Plan were completed between November 2000 and December 2001.

SECTION 1 - INTRODUCTION

Site Setting

The Site is located within the western section of the Town of Tonawanda, Erie County, New York (Figure 1). The Site is located on the southwest corner of an industrial property (presently the Tonawanda Coke Corporation) in an extensively industrialized area on the east side of River Road, approximately 1.5 miles south of the South Grand Island Bridge. The Site is bordered to the south by a petroleum terminal, and to the west by River Road. The north and east boundaries abut the active Tonawanda Coke facility.

Local Hydrogeology

The Site is located within the Erie-Ontario lowlands physiographic province. The province was formerly a lake bottom during Late Wisconsin deglaciation, and is characterized by generally flat topography. The land elevation ranges between 590 and 600 feet above sea level, and slopes to the west towards River Road.

The surficial on-Site material is composed of alluvial/lacustrine sediments that are overlain by a thin veneer of fill material. This fill material, which consists of slag, tile, brick, sand and silt, averages approximately eight feet in thickness, except in the location of the former disposal pit (Figure 2) where there is approximately 10 feet of fill material. The water-bearing fill unit is not used as a

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source of potable water, and is not locally in hydraulic connection with the underlying bedrock aquifer.

The underlying bedrock aquifer has been shown to regionally flow towards the Niagara River (ERM 1992). The underlying glaciolacustrine clay has a low hydraulic conductivity, averaging $1x10^{-7}$ cm/sec. The clay deposit is underlain by the Camillus Shale formation. This formation consists of brownish gray non-fossiliferous mudstone with numerous gypsum and anhydrite inclusions and seams (ERM, 1992).

Based on the June 2001 ground water elevations, the local direction of ground water flow in the fill unit is predominantly to the west. This westerly flow direction is consistent with that reported during the May 1999 investigation (O'Brien & Gere Engineers, Inc., November 1999), and during the post-remediation quarterly ground water sampling conducted between September 1991 and June 1992 (ERM-Northeast, August 1992). A 48-inch storm sewer crosses the central portion of the Site and is oriented northwest to southeast. In the western portion of the Site a 36-inch storm sewer is generally oriented north-south perpendicular to ground water flow. The ground water elevations relative to the invert elevation of the 36-inch storm sewer were evaluated. Review of these relative elevations indicates that the invert elevation of the 36-inch storm sewer is below the water table. This suggests that ground water has the potential to discharge to the storm sewer.

Summary of Environmental Investigations

The primary focus of previous environmental investigations completed at the Site was a former disposal pit utilized for the disposal of spent catalysts generated during Research and Development (R & D) studies at the facility. Discharge into the pit occurred between 1958 and 1962, and R & D activities were discontinued in 1965. The pit area, located on the western side of the property, was estimated, by former plant personnel and aerial photographs, to be approximately 30 feet in diameter and 6 feet in depth. The wastes disposed of in this pit allegedly included off-specification batches of magnesium-chromate catalyst.

A series of investigations (under an Administrative Consent Order) were completed around the disposal pit to evaluate the lateral extent of the materials and to evaluate potential remedial options. During May 1991, the soils within the former disposal pit and the sediments within the adjacent catch basin were removed in accordance with an approved Cleanup Plan. The catch basin was cleaned with a high-pressure potable-water wash, and sediment was disposed of along with the excavated disposal pit soil. The resulting excavations were backfilled with clean soil and revegetated. A Cleanup Plan Implementation Report dated July 1991 was submitted to the New York State Department of Environmental Conservation (NYSDEC) documenting remedial activities, and was subsequently approved by the NYSDEC on August 5, 1991 (ERM, 1992).

In May 1999, samples were collected from eight ground water monitoring wells, four storm water locations, four sediment locations and five potential source areas in accordance with a Work Plan approved by the NYSDEC on April 15, 1999. The samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals in accordance with the NYSDEC 1995 Analytical Services Protocol. The investigation results were presented to Honeywell and NYSDEC in a letter report (O'Brien & Gere Engineers, Inc., November 1999). Potential source area water samples were collected from five floor drains and one catch basin. The data indicated that low concentrations of VOCs and SVOCs were detected in floor drains. In addition, low

concentrations of VOCs were detected in Catch Basin CB-1. The concentrations detected do not indicate a source, but rather residual contamination from incidental use over time. The May 1999 sediment, ground water, and storm water data are presented in the sections below for comparison to the more recently collected data.

To address NYSDEC comments regarding the November 1999 letter report, an Additional Investigation and Interim Remedial Measures Work Plan (O'Brien & Gere Engineers, Inc., May 2000) was prepared on behalf of Honeywell. Field efforts were implemented between November 2000 and December 2001. The following provides a discussion of the Work Plan implementation and associated analytical results.

SECTION 2 – FIELD INVESTIGATIONS AND ANALYTICAL RESULTS

Storm Sewer Evaluation

Task 1 of the Work Plan described the cleaning of the 48-inch and 36-inch storm sewers using hydraulic flushing and inspection of the sewers using video camera. National Vacuum was subcontracted to provide the hydraulic flushing and video inspection services. Pursuant to a request by NYSDEC, removal of sediment in the areas of Inlets A and B and Outfalls #1 and #2 was conducted prior to the initiation of the hydraulic flushing. During the sediment removal in the Outfall area, silt fencing was constructed to minimize sediment transport off-site. Excavated sediments were staged on plastic sheeting. Subsequent to sediment removal, confirmation sampling of the remaining sediment was conducted.

After the initial sediment removal and sampling, the 36-inch and 48-inch sewer were hydraulically flushed to remove accumulated sediments. Following the flushing, the sewers were televised to evaluate potential sources of inflow to the sewers.

Approximately 200 ft. of the 36-inch storm sewer, south from Manhole E toward the inlet, was cleaned. This is about 40% of the length of the pipe. Upon initiation of the cleaning, extensive quantities of sediment and debris were encountered in the sewer, which made further hydraulic flushing impossible. It is estimated that approximately 15 cubic yards of sediment had been removed. Approximately 100 ft. (20%) of the 36-inch pipe was televised, beginning at the sewer inlet. A large amount of debris was observable beyond the portion of the pipe that was hydraulically flushed. The debris precluded television inspection of the remaining length of pipe. There were no laterals or other connections observed, and groundwater infiltration was not noted in the televised section of pipe.

The 48-inch sewer could not be hydraulically flushed. The outfall of the 48-inch sewer appears to be more than half full of debris and sediments. Approximately 400 ft. (50%) of the 48-inch storm sewer was televised, starting at the inlet. Three manholes and several lateral connections were seen in the video. As with the 36-inch sewer, groundwater infiltration was not noted in the televised section of this pipe.

The hydraulic flushing and television inspection of the storm sewers has been completed to the extent possible. The presence of large amounts of debris in the sewers made further investigatory work impractical, without substantial rehabilitation of the pipelines. Based on the work completed, no significant sources of groundwater infiltration into the sewers have been observed. The portions of the two sewers that were televised, 20% of the 36-inch pipe and 50% of the 48-inch pipe, are reasonably

representative, and it can be concluded that these sewers do not represent a significant pathway for contaminant migration.

Sediment Sampling

In accordance with Task 1 – Storm Sewer Evaluation of the IRM Work Plan and the NYSDEC correspondence dated June 12, 2000 providing conditional approval of the IRM Work Plan, removal of sediments in the immediate vicinity of the inlet and outfall areas of the 36-inch and 48-inch diameter sewers was conducted. The excavations were conducted to remove potentially contaminated sediments from the inlet and outfall areas, as well as to provide a basin to allow sediment generated during the sewer cleaning to settle at the outfall area.

Sediment samples were collected from the inlet and outfall area of the 36-inch diameter sewer (Inlet A and Outfall #1) and 48-inch diameter sewer (Inlet B and Outfall #2) subsequent to the excavations during November 2000. The samples were analyzed in accordance with NYSDEC ASP procedures for volatile organic compounds (VOCs) using USEPA Method 8260B, semivolatile organic compounds (SVOCs) using USEPA Method 8270C, metals using USEPA Method 6010B, mercury using USEPA Method 7471, and cyanide using USEPA Method 9010B/9014. The samples from Inlets A and B were collected approximately 0.5 ft below the bottom of each sewer pipe. The samples from Outfalls #1 and #2 were collected approximately 1-ft below the bottom of each sewer pipe. A laboratory case narrative for the sediment analytical program is presented in Appendix A.

The VOC, SVOC, and metals (including cyanide) analytical data are provided on attached Tables 1, 2, and 3, respectively and summarized below. The May 1999 analytical data are also presented for comparative purposes.

VOCs

As summarized below, VOCs were detected at both inlet areas (Inlets A and B), and both outfall areas (Outfalls #1 and #2). Regarding the 36-inch sewer, the data indicate that total VOC concentrations were higher at Inlet A (170 µg/Kg) than Outfall #1 (146 µg/Kg). Conversely, the data associated with the 48-inch diameter sewer indicate that the total VOC concentrations at Inlet B (estimated at 2 µg/Kg) were less than at Outfall #2 (1,117.7 µg/Kg). The elevated VOCs detected in the sample from Outfall #2 are likely associated with an observed coal tar-like material in the vicinity of the outfall potentially resulting from operations on the adjacent coke plant site.

Table 2-1 *VOC analytical data summary - sediment*

	Inlet A May 1999	Inlet A November 2000	Outfall #1 May 1999	Outfall #1 November 2000
Acetone	47	120	95	55
Benzene	ND	ND	27	27
2-Butanone	20 J	31	ND	22
Carbon disulfide	ND	8	2 J	2 J
Ethylbenzene	ND	ND	15	5
Toluene	400	ND	7 J	4 J

	Inlet A May 1999	Inlet A November 2000	Outfall #1 May 1999	Outfall #1 November 2000
Trichloroethene	ND	4 J	13	6
Xylene	ND	ND	31	11
cis-1,2-DCE	ND	ND	35	9
trans-1,2-DCE	ND	ND	ND	2 J
Vinyl chloride	ND	ND	ND	1 J
Methylene chloride	7 J	7 J	11 J	2 J
Total VOCs	474 27	170 50	236 141	146 91

	Inlet B May 1999	Inlet B November 2000	Outfall #2 May 1999	Outfall #2 November 2000
Acetone	24	ND	110	28
Benzene	2 J	ND	780	170
Carbon disulfide	ND	ND	ND	0.7 J
Ethylbenzene	ND	ND	950 D	300
Styrene	ND	ND	900	6
Tetrachloroethene	ND	ND	55	1 J
Toluene	ND	ND	900 D	100
trans-1,2-DCE	ND	ND	6 J	5
Trichloroethene	ND	ND	37	14
Vinyl chloride	ND	ND	14 J	2 J
cis-1,2-DCE	ND	ND	18	10
Xylene	ND	ND	4,800 D	480
Methylene chloride	ND	2 J	ND	1 J
Total VOCs	26 2	2 2	8,570 8,460	1,117.7 1,089.7

Note: Concentrations in µg/L
ND – Not detected
J – Estimated concentration
D – Diluted concentration

Source: O'Brien & Gere Engineers, Inc.

SVOCs

SVOCs were detected in both the inlet and outfall samples. The majority of the SVOCs detected are polynuclear aromatic hydrocarbons (PAHs) typically derived from incomplete combustion and tar-

like substances. The PAHs detected in the samples include the following compounds: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. Total PAH concentrations were higher at the outfalls than at the inlets, indicating potential impacts from the adjacent coke plant operations.

Table 2-2 *SVOC analytical data summary - sediment*

	Inlet A May 1999	Inlet A November 2000	Outfall #1 May 1999	Outfall #1 November 2000
Total PAHs	64,230	41,000	204,550	1,601,100
Other SVOCs	1,150	4,900	4,400	17,500

	Inlet B May 1999	Inlet B November 2000	Outfall #2 May 1999	Outfall #2 November 2000
Total PAHs	55,040	75,070	3,057,000	2,809,900
Other SVOCs	720	2,390	172,000	52,400

Note: Concentrations in µg/L
Source: O'Brien & Gere Engineers, Inc.

Metals

Metals were detected in both inlet and outfall samples. In evaluating the metals analytical data, those metals that were greater than one half an order of magnitude higher in the outfall samples, as compared to the inlet samples, were considered site-related. Based on this evaluation, calcium was the only metal constituent that was detected at a concentration greater than one half an order of magnitude in the outfall sample (Outfall #2) compared to the inlet sample (Inlet B). In general, the metals concentrations are higher at the inlets than the outfalls, suggesting an off-site origin. Cyanide was not detected in the inlet or outfall samples.

While the recently collected data provides additional indications of sediment impacts in the vicinity of the inlets and outfalls of the sewers, storm water results from the May 1999 investigation and December 2001 investigation (discussed later in this report) indicate that contaminants in the sediments are not having a significant impact on the quality of storm water discharge. The results show that water quality data for storm water at the inlets and outfalls contained very low concentrations of VOCs, SVOCs, and metals that are orders of magnitude less than the sediment concentrations.

Monitoring Well Installations

Four additional monitoring wells (MW-9, MW-10, MW-11, and MW-12) were installed at the Site during May 2001 to evaluate whether ground water is infiltrating into the 36-inch sewer and to evaluate if contaminants are migrating off-site via ground water. The locations of these monitoring wells, as well as the eight existing monitoring wells, are shown on Figure 2. Each additional monitoring well was constructed using 5-ft long, 2-inch diameter, schedule 40 PVC well screens with 0.010-inch slots flush-threaded to PVC riser casing. Each monitoring well was installed to screen the

fill materials underlying the Site. Ground water elevations for the existing and newly installed monitoring wells are presented in Attachment 1.

The Test Boring Logs contained in Appendix B provide descriptions of the soils encountered at the four monitoring well boring locations. As indicated on the logs, fill thickness encountered in the boring locations ranged from approximately 1.5 ft at MW-11 to 9.5 ft at MW-9 and MW-10.

It should be noted that two attempts were made to install MW-11 closer to the western property line as originally proposed. The initial attempt was advanced to a depth of 14 ft below grade. Dry fill materials were encountered from 0.5 ft to 1.5 ft below grade. Beneath the fill, a dense silt was encountered to 14 ft below grade which did not contain noticeable water. Based on the background geologic information for the area, this silt extends to the top of bedrock and isolates the water-bearing fill materials from the underlying bedrock. The second attempt was advanced to a depth of 10 ft below grade approximately 25 ft to the east of the initial borehole. Similar to the initial attempt, water bearing fill materials were not encountered and the borehole was abandoned. Monitoring well MW-11 was ultimately installed at the location as shown on Figure 2.

Similar to the attempted installations of MW-11, the initial attempt to install MW-12 near the western property line as originally proposed was abandoned. The initial attempt was advanced to a depth of 10 ft below grade with similar soil encountered as at the initial attempt for MW-11. MW-12 was ultimately installed at the location shown on Figure 2. The multiple installation attempts of monitoring wells MW-11 and MW-12 along the western property boundary indicated that the fill thins significantly to the west. As such, the potential for ground water flow off-site to the west in the fill materials is minimal.

Ground Water Sampling and Analytical Data

To evaluate current ground water quality conditions at the Site, ground water samples were collected from monitoring wells MW-1 through MW-11 during June 2001. Monitoring well MW-12 was dry at the time of sampling. The analytical results are presented on attached Tables 4, 5, and 6 and are summarized on the tables below. The samples were collected using low-flow ground water purging and sampling techniques described in the Work Plan. Specific sampling details are presented on the ground water sampling field logs contained in Appendix C. Prior to sample collection, depths to ground water were measured. The depth to water measurements were converted to ground water elevations. Figure 2 illustrates ground water flow based on the June 5, 2001 ground water elevations. As indicated on Figure 2, ground water in the fill materials flows to the west-southwest, which is consistent with historic data.

Ground water samples were analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) by USEPA method 8260B and 8270B, respectively. In addition, each sample was analyzed for target analyte list (TAL) metals by USEPA series 6000-7000 and cyanide by USEPA method 335. The laboratory analyses were completed by O'Brien & Gere Laboratories, Inc. Quality Assurance/Quality Control (QA/QC) samples analyzed included matrix spike, matrix spike duplicate, blind duplicate, and a trip blank. Category B laboratory deliverables were provided by the laboratory. A laboratory case narrative for the ground water analytical program is presented in Appendix A.

VOCs

The ground water VOC data are presented on Table 4 and summarized below. The May 1999 analytical data is also presented for comparative purposes. The data indicate that VOCs were not detected above ground water standards at existing wells MW-2, MW-4, and MW-5 or newly installed well MW-11. VOCs that were detected above NYS Class GA ground water standards during June 2001 are summarized below and results are compared to the previous ground water sampling event conducted during May 1999.

Table 2-4 *VOC analytical data summary – ground water*

	VOCs	NYS Class GA Std	May 1999	June 2001
MW-1	Benzene	1	67 D	46 J
	Ethylbenzene	5	28	14 J
	Toluene	5	29	17 J
	Xylene	5	200 D	86
MW-3	Trichloroethene	5	0.5 UD	6
	cis-1,2-dichloroethene	5	0.5 UD	20
MW-6	Benzene	1	81 D	79
	Ethylbenzene	5	20	17 J
	Toluene	5	10	ND
	Xylene	5	54	49 J
	Methylene chloride	5	ND	14 J
MW-7	Benzene	1	15	13
	Xylene	5	6	9
MW-8	1,1-Dichloroethane	5	9	7
MW-9	Benzene	1	NI	5
	Ethylbenzene	5	NI	7
	Vinyl chloride	2	NI	5
	cis-1,2-dichloroethene	5	NI	8
MW-10	Benzene	1	NI	16

Note: Concentrations in µg/L
NI – Not installed
ND – Not detected
J – Estimated concentration
D – Diluted concentration

Source: O'Brien & Gere Engineers, Inc.

SVOCs

The analytical results for the SVOCs analysis are presented on Table 5 and summarized below. The May 1999 analytical data is also presented for comparative purposes. The data indicate that SVOCs were not detected above Class GA ground water standards at MW-2, MW-5, MW-6, MW-8, or MW-9 during the June 2001 monitoring. The data indicate that SVOCs were detected above NYS Class GA ground water standards at MW-1, MW-3, MW-4, MW-7, MW-10, and MW-11 during the June 2001 monitoring.

Table 2-5 *SVOC analytical data summary – ground water*

		MW-1		MW-3		MW-4		MW-7		MW-10	MW-11
	NYS Class GA Standard	May 1999	June 2001	May 1999	June 2001	May 1999	June 2001	May 1999	June 2001	June 2001	June 2001
2,4-Dimethylphenol	1	17	8	ND	ND	ND	ND	3 J	ND	ND	ND
2-Methylphenol	1	9	4 J	ND	ND	ND	ND	2 J	ND	ND	ND
4-Methylphenol	1	13	7 J	ND	ND	ND	ND	3 J	2 J	ND	ND
Phenol	1	4 J	4 J	ND	ND	ND	ND	2 J	2 J	1 J	ND
BEHP	5	ND	ND	ND	14	ND	10	3 J	ND	ND	12

Note: Concentrations in µg/L
ND - not detected
J – Estimated concentration
BEHP – Bis(2-ethylhexyl)phthalate

Source: O'Brien & Gere Engineers, Inc.

Metals

The analytical results of the metals analyses are presented on Table 6. The data indicated that sodium, manganese, and iron were detected in most wells at concentrations that exceed NYS Class GA standards. These elements are likely naturally occurring and are not likely Site related.

Cyanide was detected in most of the wells at concentrations that exceed Class GA standards. Antimony, arsenic, chromium, nickel, and lead were detected with less frequency. Elevated concentrations of these elements were detected in previous sampling events. It is likely that the presence of these metals at elevated levels is Site related. The wells where these elements were detected above standards, and the ranges in concentrations, are summarized below.

Table 2-6 *Metals analytical data summary – ground water*

Metal	Well Detected Above Standard	NYS Class GA Std	Range in Conc. (mg/L)
Antimony	MW-2, MW-5, MW-7, MW-10	0.003	0.0032 J at MW-10 to 0.0081 J at MW-7
Arsenic	MW-7	0.025	0.044
Chromium	MW-1, MW-6, and MW-7	0.05	0.0661 at MW-6 to 0.22 at MW-7
Cyanide	MW-1 through MW-9	0.2	0.36 at MW-3 to 2.1 at MW-2
Iron	MW-1, MW-2, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10	0.3	0.549 at MW-5 to 885 at MW-10
Lead	MW-7	0.025	0.143
Manganese	MW-1 through MW-7, MW-9 and MW-10	0.3	0.363 at MW-3 to 36.6 at MW-10

Metal	Well Detected Above Standard	NYS Class GA Std	Range in Conc. (mg/L)
Nickel	MW-7	0.1	0.259
Sodium	MW-1, MW-2, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, and MW-11	20	23.1 at MW-10 to 131 at MW-8

Source: O'Brien & Gere Engineers, Inc.

Storm Water Sampling and Analytical Data

Storm water samples were collected at Inlets A and B and Outfalls #1 and #2 on December 11, 2001. The storm water samples were analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) by ASP Method 95-1 and 95-2, respectively. In addition, each sample was analyzed for target analyte list metals (TAL) by USEPA series 6000-7000 and cyanide by USEPA method 335. The laboratory analyses were completed by O'Brien & Gere Laboratories, Inc. Quality Assurance/Quality Control (QA/QC) samples analyzed included matrix spike, matrix spike duplicate, blind duplicate, and a trip blank. Category B laboratory deliverables were provided by the laboratory. A laboratory case narrative for the storm water analytical program is presented in Appendix A.

VOCs

The storm water VOC data are presented on Table 7 and summarized below. The May 1999 analytical data are also presented for comparative purposes. The data indicate that other than methylene chloride, VOCs were not detected in the Inlet samples. Methylene chloride was detected in the QC trip blank and its detection in the Inlet samples is likely not site-related. VOCs detected in the Outfall samples are similar in both compounds and concentrations as compared to the May 1999 data.

Table 2-7 *VOC analytical data summary – storm water*

	Inlet A May 1999	Inlet A December 2001	Outfall #1 May 1999	Outfall #1 December 2001
Acetone	2 J	ND	4 J	3 J
Benzene	ND	ND	6	6 J
Carbon disulfide	ND	ND	0.2 J	0.8 J
Ethylbenzene	ND	ND	0.4 J	0.6 J
Toluene	0.1 J	ND	0.9	2 J
Trichloroethene	ND	ND	0.9	ND
Xylene	ND	ND	2	2 J
cis-1,2-DCE	ND	ND	8	0.8 J
Methylene chloride	ND	1 J	ND	1 J

	Inlet B May 1999	Inlet B December 2001	Outfall #2 May 1999	Outfall #2 December 2001
Acetone	4 J	ND	6 J	3 J
Bromodichloromethane	ND	ND	0.2 J	ND
Chloroform	ND	ND	0.3 J	ND
Tetrachloroethene	ND	ND	0.4 J	ND
1,1,1-Trichloroethane	ND	ND	0.1 J	ND
Trichloroethene	ND	ND	0.2 J	ND
Vinyl chloride	ND	ND	0.5 J	0.5 J
cis-1,2-DCE	ND	ND	1	0.7 J
Methylene chloride	ND	1 J	ND	1 J

Note: Concentrations in µg/L
ND – Not detected
J – Estimated concentration

Source: O'Brien & Gere Engineers, Inc.

SVOCs

The storm water SVOC data are presented on Table 8. The data indicate that SVOCs were not detected in the Inlet samples. Naphthalene (57 µg/L), and estimated concentrations of 2-methylnaphthalene (6 µg/L), fluorene (2 µg/L), and phenanthrene (2 µg/L) were detected in the Outfall #1 sample. Naphthalene was detected in the Outfall #2 sample at a concentration of 22 µg/L. No other SVOCs were detected in the Outfall #2 sample.

Metals

The storm water metals data are presented on Table 9. To distinguish whether metals detected in the storm water Outfall samples are site-related or due to natural variations, those metal constituents that were detected at concentrations equal to or greater than one-half an order of magnitude, or detected in the Outfalls but not the Inlets, were identified. The following metal constituents were identified as fitting these criteria: iron, silver, cyanide for Outfall #1, and antimony and lead for Outfall #2. It should be noted that silver was detected in the Outfall #1 sample at an estimated concentration at the detection limit (1 µg/L).

SECTION 3 – CONCLUSIONS

Storm Sewer Evaluation

The hydraulic flushing and video inspection indicated that the 36-inch and 48-inch storm sewers contain a large amount of debris, making further investigatory work impractical without substantial rehabilitation of the pipelines. Based on the work completed, no significant sources of groundwater infiltration into the sewers were observed. The portions of the two sewers that were televised (20% of the 36-inch pipe and 50% of the 48-inch pipe) are reasonably representative. It can be concluded

that these sewers do not represent a significant pathway for contaminant migration. While the invert elevations of the storm sewer system are below the water table and the storm sewers may be receiving minimal amounts of ground water via infiltration, the concentrations are relatively low as indicated by the storm water sample data. In addition, the storm water sample data indicate that impacted sediments in the Inlet and Outfall areas have minimal impact on storm water quality.

Storm Sewer Sediment

In summary, the sediment data associated with the 36-inch storm sewer indicated higher concentrations of total VOCs at Inlet A than were detected at Outfall #1. Conversely, at the 48-inch storm sewer, higher concentrations of total VOCs were detected in Outfall #2 than were detected in Inlet B. SVOCs were detected in both the upstream and downstream sediment samples. The highest concentrations of SVOCs were detected Outfall #2. The elevated BTEX and SVOC concentrations at Outfall# 2 are likely attributed to the observed coal tar-like substance in that area and could potentially be related to the adjacent coke plant.

A comparison between VOC, SVOC, and metals analytical results for sediment samples collected during May 1999 as part of a voluntary site investigation (O'Brien & Gere Engineers, Inc., letter report dated November 9, 1999), and the recent sediment sampling (November 2000), is provided on Table 4. The data shown on Table 4 is summarized as follows:

- Total VOC concentrations were lower during November 2000 compared to May 1999.
- Total PAH concentrations were lower during November 2000 compared to May 1999 at Inlet A and Outfall #2, and higher at Inlet B and Outfall #1.
- The total concentration of other SVOCs was generally higher during November 2000 compared to May 1999, with the exception of Outfall #2.
- Metals concentrations that were greater than one half an order of magnitude in the outfall samples compared to the inlet samples were considered to be site-related. During the May 1999 sampling, concentrations of calcium at Outfall #2, mercury at Outfalls #1 and #2, and cyanide at Outfalls #1 and #2 were considered to be site-related. During the November 2000 sampling, the concentrations of mercury was lower at Inlet A, Outfalls #1 and #2, and higher at Inlet B compared to the May 1999 data, and cyanide was not detected.

Ground Water

VOC constituents detected in ground water above NYS Class GA ground water standards consist mainly of benzene, ethylbenzene, toluene, and xylene. One or more of these compounds were detected above standards in wells MW-1, MW-6, MW-7, MW-9, and MW-10. Chlorinated VOCs were detected in ground water with less frequency. 1,1-dichloroethane (detected in MW-8), trichloroethene (detected in MW-3), and cis-1,2-dichloroethene (detected in MW-3 and MW-9) were the only chlorinated VOCs detected in ground water at concentrations above standards. Low concentrations of SVOCs were detected above standards at monitoring wells MW-1, MW-3, MW-4,

MW-7, MW-10, and MW-11. Consistent with previous data, chromium, cyanide, and lead were detected in most wells at concentrations that exceed NYS Class GA standards.

The VOC, SVOC, and metals concentrations detected in ground water are not indicative of a continuing source but rather residual contamination.

Storm Water

Based on the analytical data, concentrations of VOCs, SVOCs, or metals in the residual sediments in the sewer pipes and the Inlet and Outfall areas do not have a significant impact on storm water quality. Likewise, potential infiltration of ground water carrying concentrations of VOCs, SVOCs, and metals does not have a significant impact on storm water quality. The storm water sample data indicates that small concentrations of VOCs may be carried off-site via storm water but at concentrations that do not exceed New York State Ambient Water Quality Standards (NYSDEC, 1998). The analytical data indicates that migration of SVOCs and metals via storm water are not significant.

If you have any questions regarding the information presented herein, please contact me at your earliest convenience at (315) 437-6100.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

James R. Heckathorne, P.E.
Vice President

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cc: Maria Kaouris – Honeywell
David Flynn, Esq. – Phillips, Lytle, Hitchcock, Blaine & Huber, LLP
James R. Heckathorne, P.E. – O'Brien & Gere Engineers, Inc.
Deborah Y. Wright – O'Brien & Gere Engineers, Inc.

O'BRIEN & GERE
ENGINEERS, INC.

Table 1
Honeywell
Tonawanda, NY
Volatile Organic Compound Data
Storm Sediment Samples

	Sample ID	Outfall #1	Outfall #1 RE	Outfall #1	Outfall #1 DUP	Outfall #2	Outfall #2 DL	Outfall #2
	Sample Date	05/10/99	05/10/99	11/15/00	11/15/00	05/10/99	05/10/99	11/15/00
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
1,1,1-Trichloroethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
1,1,2,2-Tetrachloroethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
1,1,2-Trichloroethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
1,1-Dichloroethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
1,1-Dichloroethene		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
1,2-Dichloroethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
1,2-Dichloropropane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
2-Butanone (MEK)		43 UD	43 UD	22	21 J	57 UD	1100 UD	13 UD
2-Hexanone		22 UD	22 UD	9 UD	10 UD	29 UD	570 UD	6 UD
4-Methyl-2-pentanone (MIBK)		22 UD	22 UD	9 UD	10 UD	29 UD	570 UD	6 UD
Acetone		95	66	55	51	110	1100 UD	28
Benzene		27	16	27	22	780	300 D	170
Bromodichloromethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
Bromoform		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
Bromomethane		22 UD	22 UD	9 UD	10 UD	29 UD	570 UD	6 UD
Carbon disulfide		2 J	11 UD	2 J	2 J	14 UD	290 UD	0.7 J
Carbon tetrachloride		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
Chlorobenzene		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
Chloroethane		22 UD	22 UD	9 UD	10 UD	29 UD	570 UD	6 UD
Chloroform		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
Chloromethane		22 UD	22 UD	9 UD	10 UD	29 UD	570 UD	6 UD
Dibromochloromethane		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
Ethene, 1,2-dichloro-, (E)-		11 UD	11 UD	2 J	2 J	6 J	290 UD	5
Ethylbenzene		15	7 J	5	5 J	2400 E	950 D	300
Methylene chloride		22 UD	11 J	2 J	2 J	29 UD	570 UD	1 J
Styrene		11 UD	11 UD	5 UD	5 UD	900	51 JD	6
Tetrachloroethene		11 UD	11 UD	5 UD	5 UD	55	290 UD	1 J
Toluene		7 J	6 J	4 J	3 J	2200 E	900 D	100
Trichloroethene		13	5 J	6	5 J	37	290 UD	14
Vinyl chloride		22 UD	22 UD	1 J	1 J	14 J	570 UD	2 J
Xylene (total)		17	31	11	9	11000 E	4800 D	480
cis-1,2-Dichloroethene		35	22	9	8	18	290 UD	10
cis-1,3-Dichloropropylene		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD
trans-1,3-Dichloropropene		11 UD	11 UD	5 UD	5 UD	14 UD	290 UD	3 UD

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE ENGINEERS, INC.

Table 1
Honeywell
Tonawanda, NY
Volatile Organic Compound Data
Storm Sediment Samples

	Sample ID	Storm Inlet A	Storm Inlet A RE	Storm Inlet A	Storm Inlet B	Storm Inlet B RE	Storm Inlet B
	Sample Date	05/11/99	05/11/99	11/15/00	05/11/99	05/11/99	11/15/00
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
1,1,1-Trichloroethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
1,1,2,2-Tetrachloroethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
1,1,2-Trichloroethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
1,1-Dichloroethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
1,1-Dichloroethene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
1,2-Dichloroethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
1,2-Dichloropropane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
2-Butanone (MEK)		20 J	23 UD	31	18 UD	18 UD	28 UD
2-Hexanone		12 UD	12 UD	11 UD	9 UD	9 UD	14 UD
4-Methyl-2-pentanone (MIBK)		12 UD	12 UD	11 UD	9 UD	9 UD	14 UD
Acetone		47	35	120	24	24	28 UD
Benzene		6 UD	6 UD	6 UD	2 J	1 J	7 UD
Bromodichloromethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Bromoform		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Bromomethane		12 UD	12 UD	11 UD	9 UD	9 UD	14 UD
Carbon disulfide		6 UD	6 UD	8	4 UD	4 UD	7 UD
Carbon tetrachloride		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Chlorobenzene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Chloroethane		12 UD	12 UD	11 UD	9 UD	9 UD	14 UD
Chloroform		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Chloromethane		12 UD	12 UD	11 UD	9 UD	9 UD	14 UD
Dibromochloromethane		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Ethene, 1,2-dichloro-, (E)-		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Ethylbenzene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Methylene chloride		3 J	7 J	7 J	9 UD	9 UD	2 J
Styrene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Tetrachloroethene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
Toluene		400	120	6 UD	4 UD	4 UD	7 UD
Trichloroethene		6 UD	6 UD	4 J	4 UD	4 UD	7 UD
Vinyl chloride		12 UD	12 UD	11 UD	9 UD	9 UD	14 UD
Xylene (total)		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
cis-1,2-Dichloroethene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
cis-1,3-Dichloropropylene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD
trans-1,3-Dichloropropene		6 UD	6 UD	6 UD	4 UD	4 UD	7 UD

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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Table 2
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Sediment Samples

	Sample ID	Outfall #1	Outfall #1 RE	Outfall #1	Outfall #1 DUP	Outfall #2	Outfall #2 DL	Outfall #2 RE
	Sample Date	05/10/99	05/10/99	11/15/00	11/15/00	05/10/99	05/10/99	05/10/99
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
1,2,4-Trichlorobenzene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
1,2-Dichlorobenzene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
1,3-Dichlorobenzene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
1,4-Dichlorobenzene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2,4,5-Trichlorophenol		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
2,4,6-Trichlorophenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2,4-Dichlorophenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2,4-Dimethylphenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2,4-Dinitrophenol		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
2,4-Dinitrotoluene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2,6-Dinitrotoluene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2-Chloronaphthalene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2-Chlorophenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2-Methylnaphthalene		750 J	7200 UD	3400 J	35000 UD	71000	73000 JD	70000
2-Methylphenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
2-Nitroaniline		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
2-Nitrophenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
3,3-Dichlorobenzidine		14000 UD	14000 UD	63000 UD	69000 UD	76000 UD	150000 UD	76000 UD
3-Nitroaniline		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
4,6-Dinitro-2-methylphenol		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
4-Bromophenyl phenyl ether		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
4-Chloro-3-methylphenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
4-Chloroaniline		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
4-Chlorophenyl phenyl ether		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
4-Methylphenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
4-Nitroaniline		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
4-Nitrophenol		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
Acenaphthene		1800 J	1800 J	8700 J	7800 J	51000	53000 JD	50000
Acenaphthylene		1500 J	1400 J	23000 J	17000 J	68000	73000 JD	67000
Anthracene		6200 J	6200 J	43000	34000 J	140000	150000 D	140000
Benzo(a)anthracene		14000	14000	130000	93000	130000	140000 D	140000
Benzo(b)fluoranthene		20000	18000	170000	120000	170000	160000 D	170000
Benzo(ghi)perylene		8800	11000	53000	40000	74000	50000 JD	89000
Benzo(k)fluoranthene		5900 J	7100 J	52000	37000	62000	71000 JD	58000
Benzo[a]pyrene		14000	15000	120000	91000	130000	130000 D	140000

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE
ENGINEERS, INC.

Table 2
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Sediment Samples

Compound	Sample ID	Outfall #1	Outfall #1 RE	Outfall #1	Outfall #1 DUP	Outfall #2	Outfall #2 DL	Outfall #2 RE
	Sample Date	05/10/99	05/10/99	11/15/00	11/15/00	05/10/99	05/10/99	05/10/99
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Bis(2-chloroethoxy)methane		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Bis(2-chloroethyl)ether		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Bis(2-chloroisopropyl) ether		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Bis(2-ethylhexyl)phthalate (BEHP)		1700 J	2000 J	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Butyl benzyl phthalate		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Carbazole		1300 J	1200 J	8800 J	4300 J	62000	66000 JD	58000
Chrysene		16000	17000	110000	79000	170000	180000 D	160000
Di-n-butyl phthalate		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Di-n-octyl phthalate		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Dibenzo(a,h)anthracene		2200 J	2500 J	14000 J	10000 J	18000 J	14000 JD	21000 J
Dibenzofuran		1100 J	1100 J	8700 J	5800 J	110000	120000 D	110000
Diethyl phthalate		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Dimethyl phthalate		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Fluoranthene		27000	25000	290000	230000	320000 E	410000 D	300000
Fluorene		2700 J	2600 J	24000 J	20000 J	170000	180000 D	160000
Hexachlorobenzene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Hexachlorobutadiene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Hexachlorocyclopentadiene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Hexachloroethane		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Indeno(1,2,3-cd)pyrene		7600	9100	53000	39000	63000	48000 JD	75000
Isophorone		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
N-Nitrosodiphenylamine		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
N-Nitrosodipropylamine		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Naphthalene		4900 J	4900 J	17000 J	14000 J	480000 E	510000 D	480000 E
Nitrobenzene		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Pentachlorophenol		36000 UD	36000 UD	160000 UD	170000 UD	190000 UD	380000 UD	190000 UD
Phenanthrene		17000	17000	190000	170000	470000 E	520000 D	470000 E
Phenol		7200 UD	7200 UD	31000 UD	35000 UD	38000 UD	76000 UD	38000 UD
Pyrene		38000	47000	300000	230000	400000 E	300000 D	490000 E

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE ENGINEERS, INC.

Table 2
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Sediment Samples

	Sample ID	Outfall #2	Storm Inlet A	Storm Inlet A DL	Storm Inlet A RE	Storm Inlet A	Storm Inlet B	Storm Inlet B
	Sample Date	11/15/00	05/11/99	05/11/99	05/11/99	11/15/00	05/11/99	11/15/00
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
1,2,4-Trichlorobenzene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
1,2-Dichlorobenzene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
1,3-Dichlorobenzene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
1,4-Dichlorobenzene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2,4,5-Trichlorophenol		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
2,4,6-Trichlorophenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2,4-Dichlorophenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2,4-Dimethylphenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2,4-Dinitrophenol		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
2,4-Dinitrotoluene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2,6-Dinitrotoluene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2-Chloronaphthalene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2-Chlorophenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2-Methylnaphthalene		7900 J	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	520 J
2-Methylphenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
2-Nitroaniline		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
2-Nitrophenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
3,3-Dichlorobenzidine		84000 UD	3100 UD	6200 UD	3100 UD	30000 UD	5800 UD	1900 UD
3-Nitroaniline		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
4,6-Dinitro-2-methylphenol		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
4-Bromophenyl phenyl ether		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
4-Chloro-3-methylphenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
4-Chloroaniline		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
4-Chlorophenyl phenyl ether		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
4-Methylphenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
4-Nitroaniline		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
4-Nitrophenol		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
Acenaphthene		32000 J	310 J	3100 UD	300 J	15000 UD	2900 UD	470 J
Acenaphthylene		38000 J	550 J	730 JD	570 J	15000 UD	550 J	1300
Anthracene		110000	2000	2100 JD	2000	15000 UD	1100 J	3500
Benzo(a)anthracene		210000	4800	5200 D	5000	2600 J	5000	9200
Benzo(b)fluoranthene		250000	6500	6800 D	6700	5800 J	7900	8900
Benzo(ghi)perylene		87000	3300	3400 D	3500	1600 J	2800 J	100 J
Benzo(k)fluoranthene		110000	2400	3100 JD	2200	2700 J	2900 J	3700
Benzo[a]pyrene		200000	4800	5400 D	4800	3000 J	5600	1300

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE ENGINEERS, INC.

Table 2
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Sediment Samples

	Sample ID	Outfall #2	Storm Inlet A	Storm Inlet A DL	Storm Inlet A RE	Storm Inlet A	Storm Inlet B	Storm Inlet B
	Sample Date	11/15/00	05/11/99	05/11/99	05/11/99	11/15/00	05/11/99	11/15/00
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
Bis(2-chloroethoxy)methane		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Bis(2-chloroethyl)ether		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Bis(2-chloroisopropyl) ether		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Bis(2-ethylhexyl)phthalate (BEHP)		7400 J	340 J	320 JD	350 J	23000	720 J	690 J
Butyl benzyl phthalate		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Carbazole		18000 J	400 J	430 JD	380 J	15000 UD	2900 UD	290 J
Chrysene		210000	5300	5600 D	5200	5300 J	6300	7700
Di-n-butyl phthalate		42000 UD	1500 UD	3100 UD	1500 UD	2600 J	2900 UD	110 J
Di-n-octyl phthalate		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Dibenzo(a,h)anthracene		24000 J	990 J	930 JD	1000 J	15000 UD	870 J	800 J
Dibenzofuran		27000 J	410 J	440 JD	410 J	15000 UD	2900 UD	290 J
Diethyl phthalate		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	550 J
Dimethyl phthalate		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Fluoranthene		480000	7800	9900 D	7200	4700 J	7900	19000 D
Fluorene		60000	1200 J	1300 JD	1200 J	15000 UD	420 J	1300
Hexachlorobenzene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	240 J
Hexachlorobutadiene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Hexachlorocyclopentadiene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Hexachloroethane		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	220 J
Indeno(1,2,3-cd)pyrene		87000	3000	3100 JD	3200	1600 J	2700 J	1000
Isophorone		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
N-Nitrosodiphenylamine		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
N-Nitrosodipropylamine		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Naphthalene		64000	180 J	3100 UD	180 J	15000 UD	2900 UD	680 J
Nitrobenzene		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Pentachlorophenol		210000 UD	7800 UD	16000 UD	7800 UD	74000 UD	15000 UD	4600 UD
Phenanthrene		340000	7100	7800 D	7100	2700 J	2600 J	9000
Phenol		42000 UD	1500 UD	3100 UD	1500 UD	15000 UD	2900 UD	920 UD
Pyrene		500000	13000 E	14000 D	14000 E	11000 J	8400	6600

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE
ENGINEERS, INC.

Table 3
Honeywell
Tonawanda, NY
Inorganic Data
Storm Sediment Samples

	Sample ID	Outfall #1	Outfall #1	Outfall #1 DUP	Outfall #2	Outfall #2	Storm Inlet A	Storm Inlet A
	Sample Date	05/10/99	11/15/00	11/15/00	05/10/99	11/15/00	05/11/99	11/15/00
	Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound								
Aluminum		24700	14800	18600	11000	18300	16300	17600
Antimony		0.71 UD	0.29 UD	0.31 UD	0.92 UD	0.26 J	0.37 UD	0.73 J
Arsenic		23.5	9.0	12.3	53.5	11.1	7.3	14.5
Barium		118	69.3	100	104	132	118	112
Beryllium		3.2 J	1.4 J	1.7 J	2.1 J	3.3	1.0 J	1.3 J
Cadmium		1.9 J	0.048 UD	0.052 UD	2.0 J	0.058 J	0.59 J	0.25 J
Calcium		15700	10500	15900	84600	63000	39700	46600
Chromium		105	38.5	50.2	34.9	18.4	28.2	41.7
Cobalt		10 J	6.9 J	9.3 J	16.3 J	6.4	13.5	10.1 J
Copper		64.3	31.2	55.8	45.1	24.0	33.6	45.9
Cyanide		17.4	0.95 UD	1.0 UD	4.8	0.63 UD	1.2 UD	1.1 UD
Iron		133000	46700	52600	118000	21800	33800	30200
Lead		87.4	52.1	73.0	41.3	31.1	34.8	131
Magnesium		6070	5010	7870	18100	12800	10600	10400
Manganese		960	379	506	1420	1970	523	562
Mercury		0.53	0.18 J	0.33	0.77	0.28	0.070 J	0.063 J
Nickel		32.1	22.7	37.8	39.9	14.5	24.7	29.8
Potassium		1440 J	1920	2400	733 J	1880	2630	3180
Selenium		6.5	1.9	2.4	4.4	2.8	1.3	1.9
Silver		0.44 UD	0.14 UD	0.15 UD	0.57 UD	0.15 J	0.23 UD	0.16 UD
Sodium		405 J	152 J	228	402 J	632	399	315
Thallium		1.7 UD	0.82 J	0.77 UD	2.2 UD	0.56 J	0.89 UD	0.82 UD
Vanadium		43.2	26.7	35.2	16.8 J	19.2	34.6	31.6
Zinc		446	193	255	140	110	125	201

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE
ENGINEERS, INC.

Table 3
Honeywell
Tonawanda, NY
Inorganic Data
Storm Sediment Samples

	Sample ID	Storm Inlet B	Storm Inlet B
	Sample Date	05/11/99	11/15/00
	Units	mg/Kg	mg/Kg
Compound			
Aluminum		17300	30000
Antimony		0.28 UD	0.46 J
Arsenic		11.9	24.0
Barium		104	125
Beryllium		1.3 J	2.6 J
Cadmium		0.70 J	1.4 J
Calcium		12000	5680
Chromium		44.1	69.9
Cobalt		13.6	19.9
Copper		54.1	103
Cyanide		0.88 UD	1.4 UD
Iron		35300	47600
Lead		31.1	60.6
Magnesium		7570	6580
Manganese		514	509
Mercury		0.079 J	0.13 J
Nickel		32.4	55.7
Potassium		1870	3980
Selenium		1.3	3.1
Silver		0.18 UD	0.20 UD
Sodium		187	214 J
Thallium		0.67 UD	1.5 J
Vanadium		32.7	53.7
Zinc		211	605

NOTES: U - Not detected, J - Estimated value, E - outside linear range, D - from diluted analysis, --- - Not analyzed.

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O'BRIEN & GERE ENGINEERS, INC.

Table 4
Honeywell
Tonawanda, NY
Volatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-01	MW-01 DL	MW-01	MW-01 DUP	MW-02	MW-02
	Sample Date	GW Standards ug/L	05/12/99	05/12/99	06/05/01	06/05/01	05/12/99	06/09/01
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane		5*	0.4 J	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
1,1,2,2-Tetrachloroethane		NS	0.5 UD	2 UD	50 U	50 U	0.5 UD	0.5 U
1,1,2-Trichloroethane		1	0.5 UD	2 UD Y	50 U Y	50 U Y	0.5 UD	0.5 U
1,1-Dichloroethane		5*	0.7	0.7 JD	50 U Y	50 U Y	0.5 UD	0.5 U
1,1-Dichloroethene		5*	0.5 UD	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
1,2-Dichloroethane		0.6	0.5 UD	2 UD Y	50 U Y	50 U Y	0.5 UD	0.5 U
1,2-Dichloropropane		1	0.5 UD	2 UD Y	50 U Y	50 U Y	0.5 UD	0.5 U
2-Butanone (MEK)		NS	10 UD	50 UD	1000 U	1000 U	10 UD	10 U
2-Hexanone		NS	5 UD	25 UD	500 U	500 U	5 UD	5 U
4-Methyl-2-pentanone (MIBK)		NS	5 UD	25 UD	500 U	500 U	5 UD	5 U
Acetone		NS	13	14 JD	1000 U	1000 U	1 J	10 U
Benzene		1	70 E Y	67 D Y	46 J Y	79 Y	0.5 UD	0.5 U
Bromodichloromethane		NS	0.5 UD	2 UD	50 U	50 U	0.5 UD	0.5 U
Bromoform		NS	0.5 UD	2 UD	50 U	50 U	0.5 UD	0.5 U
Bromomethane		5*	1 UD	5 UD	100 U Y	100 U Y	1 UD	1 U
Carbon disulfide		NS	11	11 D	15 J	50 U	0.5 UD	0.1 J
Carbon tetrachloride		5	0.5 UD	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
Chlorobenzene		5*	0.5 UD	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
Chloroethane		5*	1 UD	5 UD	100 U Y	100 U Y	1 UD	1 U
Chloroform		7	0.2 J	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
Chloromethane		NS	1 UD	5 UD	100 U	100 U	1 UD	1 U
Dibromochloromethane		5*	0.5 UD	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
Ethene, 1,2-dichloro-, (E)-		5*	0.5 UD	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
Ethylbenzene		5*	28 Y	27 D Y	14 J Y	18 J Y	0.5 UD	0.5 U
Methylene chloride		5*	2 UD	10 UD Y	200 U Y	22 J Y	2 UD	0.3 J
Styrene		5*	2	2 JD	50 U Y	50 U Y	0.5 UD	0.5 U
Tetrachloroethene		5*	0.5	0.5 JD	50 U Y	50 U Y	0.5 UD	0.5 U
Toluene		5*	29 Y	26 D Y	17 J Y	50 U Y	0.5 UD	0.5 U
Trichloroethene		5*	1	0.9 JD	50 U Y	50 U Y	0.5 UD	0.5 U
Vinyl chloride		2	1 UD	5 UD Y	100 U Y	100 U Y	1 UD	1 U
Xylene (total)		5*	200 E Y	200 D Y	86 Y	45 J Y	0.5 UD	0.5 U
cis-1,2-Dichloroethene		5*	0.2 J	2 UD	50 U Y	50 U Y	0.5 UD	0.5 U
cis-1,3-Dichloropropylene		NS	0.5 UD	2 UD	50 U	50 U	0.5 UD	0.5 U
trans-1,3-Dichloropropene		NS	0.5 UD	2 UD	50 U	50 U	0.5 UD	0.5 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 4
Honeywell
Tonawanda, NY
Volatile Organic Compound Data
Ground Water Samples

Sample ID	NYSDEC Class GA	MW-03	MW-03	MW-04	MW-04	MW-05	MW-05
Sample Date	GW Standards ug/L	05/12/99	06/09/01	05/12/99	06/09/01	05/12/99	06/07/01
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
1,1,1-Trichloroethane	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
1,1,2,2-Tetrachloroethane	NS	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
1,1,2-Trichloroethane	1	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
1,1-Dichloroethane	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
1,1-Dichloroethene	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
1,2-Dichloroethane	0.6	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
1,2-Dichloropropane	1	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
2-Butanone (MEK)	NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
2-Hexanone	NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
Acetone	NS	2 J	6 J	10 UD	3 J	2 J	10 J
Benzene	1	0.5 UD	0.1 J	1	0.5 U	0.5 UD	0.5 U
Bromodichloromethane	NS	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Bromoform	NS	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Bromomethane	5*	1 UD	1 U	1 UD	1 U	1 UD	1 U
Carbon disulfide	NS	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Carbon tetrachloride	5	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Chlorobenzene	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Chloroethane	5*	1 UD	1 U	1 UD	1 U	1 UD	1 U
Chloroform	7	0.5 UD	0.2 J	0.1 J	0.5 U	0.5 UD	0.5 U
Chloromethane	NS	1 UD	1 U	1 UD	1 U	1 UD	1 U
Dibromochloromethane	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Ethene, 1,2-dichloro-, (E)-	5*	0.5 UD	1	0.5 UD	0.5 U	0.5	0.8
Ethylbenzene	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Methylene chloride	5*	2 UD	2 U	2 UD	0.4 J	2 UD	2 U
Styrene	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
Tetrachloroethene	5*	0.5 UD	0.3 J	0.5 UD	0.5 U	0.5 UD	0.5 U
Toluene	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.1 J
Trichloroethene	5*	0.5 UD	6 Y	0.8	0.5 U	4	0.7
Vinyl chloride	2	1 UD	0.7 J	1	1 U	0.4 J	0.3 J
Xylene (total)	5*	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
cis-1,2-Dichloroethene	5*	0.5 UD	20 Y	2	0.5 U	1	2
cis-1,3-Dichloropropylene	NS	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U
trans-1,3-Dichloropropene	NS	0.5 UD	0.5 U	0.5 UD	0.5 U	0.5 UD	0.5 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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Table 4
Honeywell
Tonawanda, NY
Volatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-06	MW-06 DL	MW-06	MW-07	MW-07	MW-08
	Sample Date	GW Standards	05/12/99	05/12/99	06/06/01	05/12/99	06/06/01	05/12/99
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane		5*	0.5 UD	2 UD	50 U Y	0.5 UD	5 U	1
1,1,2,2-Tetrachloroethane		NS	0.5 UD	2 UD	50 U	0.5 UD	5 U	0.5 UD
1,1,2-Trichloroethane		1	0.5 UD	2 UD Y	50 U Y	0.5 UD	5 U Y	0.5 UD
1,1-Dichloroethane		5*	0.3 J	2 UD	50 U Y	0.4 J	5 U	9 Y
1,1-Dichloroethene		5*	0.5 UD	2 UD	50 U Y	0.5 UD	5 U	0.5 UD
1,2-Dichloroethane		0.6	0.5 UD	2 UD Y	50 U Y	0.5 UD	5 U Y	0.5 UD
1,2-Dichloropropane		1	0.5 UD	2 UD Y	50 U Y	0.5 UD	5 U Y	0.5 UD
2-Butanone (MEK)		NS	10 UD	50 UD	1000 U	2 J	100 U	10 UD
2-Hexanone		NS	5 UD	25 UD	500 U	5 UD	50 U	5 UD
4-Methyl-2-pentanone (MIBK)		NS	5 UD	25 UD	500 U	5 UD	50 U	5 UD
Acetone		NS	10 UD	50 UD	1000 U	27	14 J	10 UD
Benzene		1	82 E Y	81 D Y	79 Y	15 Y	13 Y	0.5 UD
Bromodichloromethane		NS	0.5 UD	2 UD	50 U	0.5 UD	5 U	0.5 UD
Bromoform		NS	0.5 UD	2 UD	50 U	0.5 UD	5 U	0.5 UD
Bromomethane		5*	1 UD	5 UD	100 U Y	1 UD	10 U Y	1 UD
Carbon disulfide		NS	3	14 D	12 J	3	13	0.5 UD
Carbon tetrachloride		5	0.5 UD	2 UD	50 U Y	0.5 UD	5 U	0.5 UD
Chlorobenzene		5*	0.5 UD	2 UD	50 U Y	0.5 UD	5 U	0.5 UD
Chloroethane		5*	1 UD	5 UD	100 U Y	1 UD	10 U Y	1 UD
Chloroform		7	0.2 J	2 UD	50 U Y	0.5 UD	5	0.5 UD
Chloromethane		NS	1 UD	5 UD	100 U	1 UD	10 U	1 UD
Dibromochloromethane		5*	0.5 UD	2 UD	50 U Y	0.5 UD	5 U	0.5 UD
Ethene, 1,2-dichloro-, (E)-		5*	0.5 UD	2 UD	50 U Y	0.5 UD	5 U	0.5 UD
Ethylbenzene		5*	20 Y	19 D Y	17 J Y	1	2 J	0.5 UD
Methylene chloride		5*	2 UD	10 UD Y	14 J Y	2 UD	2 J	2 UD
Styrene		5*	0.6	0.6 JD	50 U Y	0.2 J	5 U	0.5 UD
Tetrachloroethene		5*	0.1 J	2 UD	50 U Y	0.5 UD	5 U	0.5 UD
Toluene		5*	10 Y	9 D Y	50 U Y	4	4 J	0.5 UD
Trichloroethene		5*	3	3 D	50 U Y	0.2 J	5 U	0.2 J
Vinyl chloride		2	1 UD	5 UD Y	100 U Y	1 UD	10 U Y	1 UD
Xylene (total)		5*	54 Y	50 D Y	49 J Y	6 Y	9 Y	0.5 UD
cis-1,2-Dichloroethene		5*	0.7	0.6 JD	50 U Y	0.5 UD	5 U	1
cis-1,3-Dichloropropylene		NS	0.5 UD	2 UD	50 U	0.5 UD	5 U	0.5 UD
trans-1,3-Dichloropropene		NS	0.5 UD	2 UD	50 U	0.5 UD	5 U	0.5 UD

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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Table 4
Honeywell
Tonawanda, NY
Volatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-08	MW-09	MW-10	MW-11
	Sample Date	GW Standards ug/L	06/05/01	06/06/01	06/05/01	06/07/01
	Units		ug/L	ug/L	ug/L	ug/L
1,1,1-Trichloroethane		5*	1	1 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane		NS	0.5 U	1 U	5 U	0.5 U
1,1,2-Trichloroethane		1	0.5 U	1 U	5 U Y	0.5 U
1,1-Dichloroethane		5*	7 Y	1 U	5 U	0.5 U
1,1-Dichloroethene		5*	0.5 U	1 U	5 U	0.5 U
1,2-Dichloroethane		0.6	0.5 U	1 U Y	5 U Y	0.5 U
1,2-Dichloropropane		1	0.5 U	1 U	5 U Y	0.5 U
2-Butanone (MEK)		NS	10 U	20 U	100 U	10 U
2-Hexanone		NS	5 U	10 U	50 U	5 U
4-Methyl-2-pentanone (MIBK)		NS	5 U	10 U	50 U	5 U
Acetone		NS	4 J	20 U	100 U	6 J
Benzene		1	0.5 U	5 Y	16 Y	0.6
Bromodichloromethane		NS	0.5 U	1 U	5 U	0.5 U
Bromoform		NS	0.5 U	1 U	5 U	0.5 U
Bromomethane		5*	1 U	2 U	10 U Y	1 U
Carbon disulfide		NS	0.5 U	1 U	5 U	0.5 U
Carbon tetrachloride		5	0.5 U	1 U	5 U	0.5 U
Chlorobenzene		5*	0.5 U	1 U	5 U	0.5 U
Chloroethane		5*	1 U	2 U	10 U Y	1 U
Chloroform		7	0.5 U	1 U	5 U	0.5 U
Chloromethane		NS	1 U	2 U	10 U	1 U
Dibromochloromethane		5*	0.5 U	1 U	5 U	0.5 U
Ethene, 1,2-dichloro-, (E)-		5*	0.5 U	2	5 U	0.2 J
Ethylbenzene		5*	0.5 U	7 Y	1 J	0.5 U
Methylene chloride		5*	2 U	0.4 J	20 U Y	0.1 J
Styrene		5*	0.5 U	1 U	5 U	0.5 U
Tetrachloroethene		5*	0.5 U	1 U	5 U	0.5 U
Toluene		5*	0.5 U	1 J	3 J	0.1 J
Trichloroethene		5*	0.2 J	2	5 U	2
Vinyl chloride		2	1 U	5 Y	10 U Y	0.3 J
Xylene (total)		5*	0.5 U	5	5	0.1 J
cis-1,2-Dichloroethene		5*	0.8	8 Y	5 U	1
cis-1,3-Dichloropropylene		NS	0.5 U	1 U	5 U	0.5 U
trans-1,3-Dichloropropene		NS	0.5 U	1 U	5 U	0.5 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA GW Standards ug/L	MW-01	MW-01 DL	MW-01	MW-01 DUP	MW-01 DL	MW-02
	Sample Date		05/12/99	05/12/99	06/05/01	06/05/01	06/05/01	05/12/99
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene		5*	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
1,2-Dichlorobenzene		3	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
1,3-Dichlorobenzene		3	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
1,4-Dichlorobenzene		3	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
2,4,5-Trichlorophenol		NS	26 UD	2600 UD	26 U	25 U	510 U	26 UD
2,4,6-Trichlorophenol		NS	5 UD	530 UD	5 U	5 U	100 U	5 UD
2,4-Dichlorophenol		1	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
2,4-Dimethylphenol		1	17 Y	530 UD Y	8 Y	9 Y	100 U Y	5 UD Y
2,4-Dinitrophenol		1	26 UD Y	2600 UD Y	26 U Y	25 U Y	510 U Y	26 UD Y
2,4-Dinitrotoluene		5*	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
2,6-Dinitrotoluene		5*	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
2-Chloronaphthalene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
2-Chlorophenol		NS	5 UD	530 UD	5 U	5 U	100 U	5 UD
2-Methylnaphthalene		NS	380 E	400 JD	200 E	200 E	230 D	10 UD
2-Methylphenol		1	9 Y	530 UD Y	4 J Y	5 J Y	100 U Y	5 UD Y
2-Nitroaniline		5*	26 UD Y	2600 UD Y	26 U Y	25 U Y	510 U Y	26 UD Y
2-Nitrophenol		NS	5 UD	530 UD	5 U	5 U	100 U	5 UD
3,3-Dichlorobenzidine		5*	11 UD Y	1100 UD Y	10 U Y	10 U Y	200 U Y	10 UD Y
3-Nitroaniline		5*	26 UD Y	2600 UD Y	26 U Y	25 U Y	510 U Y	26 UD Y
4,6-Dinitro-2-methylphenol		NS	53 UD	5300 UD	51 U	51 U	1000 U	51 UD
4-Bromophenyl phenyl ether		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
4-Chloro-3-methylphenol		NS	5 UD	530 UD	5 U	5 U	100 U	5 UD
4-Chloroaniline		5*	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
4-Chlorophenyl phenyl ether		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
4-Methylphenol		1	13 Y	1100 UD Y	7 J Y	7 J Y	200 U Y	10 UD Y
4-Nitroaniline		5*	26 UD Y	2600 UD Y	26 U Y	25 U Y	510 U Y	26 UD Y
4-Nitrophenol		NS	26 UD	2600 UD	26 U	25 U	510 U	26 UD
Acenaphthene		NS	19	1100 UD	12	13	200 U	10 UD
Acenaphthylene		NS	15	1100 UD	10 J	10 J	200 U	10 UD
Anthracene		NS	9 J	1100 UD	5 J	5 J	200 U	10 UD
Benzo(a)anthracene		NS	5 UD	530 UD	5 U	5 U	100 U	5 UD
Benzo(b)fluoranthene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Benzo(ghi)perylene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Benzo(k)fluoranthene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Benzo[a]pyrene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE
ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-01	MW-01 DL	MW-01	MW-01 DUP	MW-01 DL	MW-02
	Sample Date	GW Standards ug/L	05/12/99	05/12/99	06/05/01	06/05/01	06/05/01	05/12/99
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Bis(2-chloroethoxy)methane		5*	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
Bis(2-chloroethyl)ether		1	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
Bis(2-chloroisopropyl) ether		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Bis(2-ethylhexyl)phthalate (BEHP)		5	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
Butyl benzyl phthalate		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Carbazole		NS	92	1100 UD	67	73	77 J	10 UD
Chrysene		NS	5 UD	530 UD	5 U	5 U	100 U	5 UD
Di-n-butyl phthalate		50	11 UD	1100 UD Y	10 U	10 U	200 U Y	10 UD
Di-n-octyl phthalate		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Dibenzo(a,h)anthracene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Dibenzofuran		NS	44	530 UD	25	27	29 J	5 UD
Diethyl phthalate		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Dimethyl phthalate		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Fluoranthene		NS	5 J	1100 UD	3 J	3 J	200 U	10 UD
Fluorene		NS	68	1100 UD	41	44	46 J	10 UD
Hexachlorobenzene		0.04	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
Hexachlorobutadiene		0.5	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
Hexachlorocyclopentadiene		5*	11 UD Y	1100 UD Y	10 U Y	10 U Y	200 U Y	10 UD Y
Hexachloroethane		5*	5 UD	530 UD Y	5 U	5 U	100 U Y	5 UD
Indeno(1,2,3-cd)pyrene		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Isophorone		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
N-Nitrosodiphenylamine		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
N-Nitrosodipropylamine		NS	11 UD	1100 UD	10 U	10 U	200 U	10 UD
Naphthalene		NS	2500 E	4600 D	1300 E	1300 E	2500 D	10 UD
Nitrobenzene		0.4	5 UD Y	530 UD Y	5 U Y	5 U Y	100 U Y	5 UD Y
Pentachlorophenol		1	26 UD Y	2600 UD Y	26 U Y	25 U Y	510 U Y	26 UD Y
Phenanthrene		NS	42	1100 UD	30	31	33 J	10 UD
Phenol		1	4 J Y	530 UD Y	4 J Y	4 J Y	100 U Y	5 UD Y
Pyrene		NS	4 J	1100 UD	3 J	3 J	200 U	10 UD

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, — - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-02 RE	MW-02	MW-03	MW-03	MW-04	MW-04
	Sample Date	GW Standards ug/L	05/12/99	06/09/01	05/12/99	06/09/01	05/12/99	06/09/01
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene		5*	5 UD	5 U	5 UD	5 U	5 UD	5 U
1,2-Dichlorobenzene		3	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
1,3-Dichlorobenzene		3	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
1,4-Dichlorobenzene		3	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
2,4,5-Trichlorophenol		NS	26 UD	25 U	25 UD	26 U	25 UD	26 U
2,4,6-Trichlorophenol		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
2,4-Dichlorophenol		1	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
2,4-Dimethylphenol		1	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
2,4-Dinitrophenol		1	26 UD Y	25 U Y	25 UD Y	26 U Y	25 UD Y	26 U Y
2,4-Dinitrotoluene		5*	5 UD	5 U	5 UD	5 U	5 UD	5 U
2,6-Dinitrotoluene		5*	5 UD	5 U	5 UD	5 U	5 UD	5 U
2-Chloronaphthalene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
2-Chlorophenol		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
2-Methylnaphthalene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
2-Methylphenol		1	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
2-Nitroaniline		5*	26 UD Y	25 U Y	25 UD Y	26 U Y	25 UD Y	26 U Y
2-Nitrophenol		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
3,3-Dichlorobenzidine		5*	10 UD Y	10 U Y	10 UD Y	10 U Y	10 UD Y	10 U Y
3-Nitroaniline		5*	26 UD Y	25 U Y	25 UD Y	26 U Y	25 UD Y	26 U Y
4,6-Dinitro-2-methylphenol		NS	51 UD	51 U	50 UD	51 U	50 UD	52 U
4-Bromophenyl phenyl ether		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
4-Chloro-3-methylphenol		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
4-Chloroaniline		5*	5 UD	5 U	5 UD	5 U	5 UD	5 U
4-Chlorophenyl phenyl ether		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
4-Methylphenol		1	10 UD Y	10 U Y	10 UD Y	10 U Y	10 UD Y	10 U Y
4-Nitroaniline		5*	26 UD Y	25 U Y	25 UD Y	26 U Y	25 UD Y	26 U Y
4-Nitrophenol		NS	26 UD	25 U	25 UD	26 U	25 UD	26 U
Acenaphthene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Acenaphthylene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Anthracene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Benzo(a)anthracene		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
Benzo(b)fluoranthene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Benzo(ghi)perylene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Benzo(k)fluoranthene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Benzo[a]pyrene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-02 RE	MW-02	MW-03	MW-03	MW-04	MW-04
	Sample Date	GW Standards ug/L	05/12/99	06/09/01	05/12/99	06/09/01	05/12/99	06/09/01
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Bis(2-chloroethoxy)methane		5*	5 UD	5 U	5 UD	5 U	5 UD	5 U
Bis(2-chloroethyl)ether		1	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
Bis(2-chloroisopropyl) ether		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Bis(2-ethylhexyl)phthalate (BEHP)		5	2 J	2 J	3 J	14 Y	3 J	10 Y
Butyl benzyl phthalate		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Carbazole		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Chrysene		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
Di-n-butyl phthalate		50	10 UD	10 U	10 UD	10 U	10 UD	10 U
Di-n-octyl phthalate		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Dibenzo(a,h)anthracene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Dibenzofuran		NS	5 UD	5 U	5 UD	5 U	5 UD	5 U
Diethyl phthalate		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Dimethyl phthalate		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Fluoranthene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Fluorene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Hexachlorobenzene		0.04	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
Hexachlorobutadiene		0.5	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
Hexachlorocyclopentadiene		5*	10 UD Y	10 U Y	10 UD Y	10 U Y	10 UD Y	10 U Y
Hexachloroethane		5*	5 UD	5 U	5 UD	5 U	5 UD	5 U
Indeno(1,2,3-cd)pyrene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Isophorone		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
N-Nitrosodiphenylamine		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
N-Nitrosodipropylamine		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Naphthalene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Nitrobenzene		0.4	5 UD Y	5 U Y	5 UD Y	5 U Y	5 UD Y	5 U Y
Pentachlorophenol		1	26 UD Y	25 U Y	25 UD Y	26 U Y	25 UD Y	26 U Y
Phenanthrene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U
Phenol		1	5 UD Y	5 U Y	5 UD Y	1 J	5 UD Y	5 U Y
Pyrene		NS	10 UD	10 U	10 UD	10 U	10 UD	10 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-05	MW-05 RE	MW-05	MW-06	MW-06 DL	MW-06 RE
	Sample Date	GW Standards ug/L	05/12/99	05/12/99	06/07/01	05/12/99	05/12/99	05/12/99
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene		5*	6 UD Y	6 UD Y	6 U Y	5 UD	100 UD Y	5 UD
1,2-Dichlorobenzene		3	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
1,3-Dichlorobenzene		3	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
1,4-Dichlorobenzene		3	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
2,4,5-Trichlorophenol		NS	29 UD	29 UD	32 U	25 UD	500 UD	25 UD
2,4,6-Trichlorophenol		NS	6 UD	6 UD	6 U	5 UD	100 UD	5 UD
2,4-Dichlorophenol		1	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
2,4-Dimethylphenol		1	6 UD Y	6 UD Y	6 U Y	2 J Y	100 UD Y	---
2,4-Dinitrophenol		1	29 UD Y	29 UD Y	32 U Y	25 UD Y	500 UD Y	25 UD Y
2,4-Dinitrotoluene		5*	6 UD Y	6 UD Y	6 U Y	5 UD	100 UD Y	5 UD
2,6-Dinitrotoluene		5*	6 UD Y	6 UD Y	6 U Y	5 UD	100 UD Y	5 UD
2-Chloronaphthalene		NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
2-Chlorophenol		NS	6 UD	6 UD	6 U	5 UD	100 UD	5 UD
2-Methylnaphthalene		NS	12 UD	12 UD	13 U	230 E	260 D	230 E
2-Methylphenol		1	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
2-Nitroaniline		5*	29 UD Y	29 UD Y	32 U Y	25 UD Y	500 UD Y	25 UD Y
2-Nitrophenol		NS	6 UD	6 UD	6 U	5 UD	100 UD	5 UD
3,3-Dichlorobenzidine		5*	12 UD Y	12 UD Y	13 U Y	10 UD Y	200 UD Y	10 UD Y
3-Nitroaniline		5*	29 UD Y	29 UD Y	32 U Y	25 UD Y	500 UD Y	25 UD Y
4,6-Dinitro-2-methylphenol		NS	59 UD	59 UD	64 U	50 UD	1000 UD	50 UD
4-Bromophenyl phenyl ether		NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
4-Chloro-3-methylphenol		NS	6 UD	6 UD	6 U	5 UD	100 UD	5 UD
4-Chloroaniline		5*	6 UD Y	6 UD Y	6 U Y	5 UD	100 UD Y	5 UD
4-Chlorophenyl phenyl ether		NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
4-Methylphenol		1	12 UD Y	12 UD Y	13 U Y	10 UD Y	200 UD Y	10 UD Y
4-Nitroaniline		5*	29 UD Y	29 UD Y	32 U Y	25 UD Y	500 UD Y	25 UD Y
4-Nitrophenol		NS	29 UD	29 UD	32 U	25 UD	500 UD	25 UD
Acenaphthene		NS	12 UD	12 UD	13 U	14	200 UD	15
Acenaphthylene		NS	12 UD	12 UD	13 U	12	200 UD	12
Anthracene		NS	12 UD	12 UD	13 U	9 J	200 UD	9 J
Benzo(a)anthracene		NS	6 UD	6 UD	6 U	6	100 UD	6
Benzo(b)fluoranthene		NS	12 UD	12 UD	13 U	5 J	200 UD	6 J
Benzo(ghi)perylene		NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Benzo(k)fluoranthene		NS	12 UD	12 UD	13 U	2 J	200 UD	10 UD
Benzo[a]pyrene		NS	12 UD	12 UD	13 U	5 J	200 UD	5 J

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Sample ID	NYSDEC Class GA	MW-05	MW-05 RE	MW-05	MW-06	MW-06 DL	MW-06 RE
Sample Date	GW Standards ug/L	05/12/99	05/12/99	06/07/01	05/12/99	05/12/99	05/12/99
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Bis(2-chloroethoxy)methane	5*	6 UD Y	6 UD Y	6 U Y	5 UD	100 UD Y	5 UD
Bis(2-chloroethyl)ether	1	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
Bis(2-chloroisopropyl) ether	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Bis(2-ethylhexyl)phthalate (BEHP)	5	6 UD Y	6 UD Y	4 J	5 UD	100 UD Y	5 UD
Butyl benzyl phthalate	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Carbazole	NS	12 UD	12 UD	13 U	15	200 UD	15
Chrysene	NS	6 UD	6 UD	6 U	8	100 UD	8
Di-n-butyl phthalate	50	12 UD	12 UD	13 U	10 UD	200 UD Y	10 UD
Di-n-octyl phthalate	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Dibenzo(a,h)anthracene	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Dibenzofuran	NS	6 UD	6 UD	6 U	9	100 UD	10
Diethyl phthalate	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Dimethyl phthalate	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Fluoranthene	NS	12 UD	12 UD	13 U	12	200 UD	11
Fluorene	NS	12 UD	12 UD	13 U	43	47 JD	43
Hexachlorobenzene	0.04	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
Hexachlorobutadiene	0.5	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
Hexachlorocyclopentadiene	5*	12 UD Y	12 UD Y	13 U Y	10 UD Y	200 UD Y	10 UD Y
Hexachloroethane	5*	6 UD Y	6 UD Y	6 U Y	5 UD	100 UD Y	5 UD
Indeno(1,2,3-cd)pyrene	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Isophorone	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
N-Nitrosodiphenylamine	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
N-Nitrosodipropylamine	NS	12 UD	12 UD	13 U	10 UD	200 UD	10 UD
Naphthalene	NS	12 UD	12 UD	13 U	1300 E	2000 D	1200 E
Nitrobenzene	0.4	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
Pentachlorophenol	1	29 UD Y	29 UD Y	32 U Y	25 UD Y	500 UD Y	25 UD Y
Phenanthrene	NS	12 UD	12 UD	13 U	50	55 JD	50
Phenol	1	6 UD Y	6 UD Y	6 U Y	5 UD Y	100 UD Y	5 UD Y
Pyrene	NS	12 UD	12 UD	13 U	15	200 UD	18

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-06	MW-06 DL	MW-07	MW-07 DL	MW-07 RE	MW-07
	Sample Date	GW Standards	06/06/01	06/06/01	05/12/99	05/12/99	05/12/99	06/06/01
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene		5*	5 U	51 U Y	5 UD	20 UD Y	5 UD	5 U
1,2-Dichlorobenzene		3	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
1,3-Dichlorobenzene		3	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
1,4-Dichlorobenzene		3	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
2,4,5-Trichlorophenol		NS	25 U	250 U	26 UD	100 UD	26 UD	26 U
2,4,6-Trichlorophenol		NS	5 U	51 U	5 UD	20 UD	5 UD	5 U
2,4-Dichlorophenol		1	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
2,4-Dimethylphenol		1	5 U Y	51 U Y	3 J Y	20 UD Y	3 J Y	1 J
2,4-Dinitrophenol		1	25 U Y	250 U Y	26 UD Y	100 UD Y	26 UD Y	26 U Y
2,4-Dinitrotoluene		5*	5 U	51 U Y	5 UD	20 UD Y	5 UD	5 U
2,6-Dinitrotoluene		5*	5 U	51 U Y	5 UD	20 UD Y	5 UD	5 U
2-Chloronaphthalene		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
2-Chlorophenol		NS	5 U	51 U	5 UD	20 UD	5 UD	5 U
2-Methylnaphthalene		NS	180 E	210 D	61	64 D	61	26
2-Methylphenol		1	5 U Y	51 U Y	2 J Y	20 UD Y	2 J Y	5 U Y
2-Nitroaniline		5*	25 U Y	250 U Y	26 UD Y	100 UD Y	26 UD Y	26 U Y
2-Nitrophenol		NS	5 U	51 U	5 UD	20 UD	5 UD	5 U
3,3-Dichlorobenzidine		5*	10 U Y	100 U Y	10 UD Y	40 UD Y	10 UD Y	10 U Y
3-Nitroaniline		5*	25 U Y	250 U Y	26 UD Y	100 UD Y	26 UD Y	26 U Y
4,6-Dinitro-2-methylphenol		NS	51 U	510 U	51 UD	200 UD	51 UD	51 U
4-Bromophenyl phenyl ether		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
4-Chloro-3-methylphenol		NS	5 U	51 U	5 UD	20 UD	5 UD	5 U
4-Chloroaniline		5*	5 U	51 U Y	5 UD	20 UD Y	5 UD	5 U
4-Chlorophenyl phenyl ether		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
4-Methylphenol		1	10 U Y	100 U Y	3 J Y	40 UD Y	3 J Y	2 J Y
4-Nitroaniline		5*	25 U Y	250 U Y	26 UD Y	100 UD Y	26 UD Y	26 U Y
4-Nitrophenol		NS	25 U	250 U	26 UD	100 UD	26 UD	26 U
Acenaphthene		NS	11	11 J	3 J	40 UD	3 J	1 J
Acenaphthylene		NS	3 J	100 U	3 J	40 UD	3 J	10 U
Anthracene		NS	5 J	100 U	5 J	40 UD	5 J	10 U
Benzo(a)anthracene		NS	5 U	51 U	7	20 UD	7	5 U
Benzo(b)fluoranthene		NS	10 U	100 U	11	11 JD	11	10 U
Benzo(ghi)perylene		NS	10 U	100 U	3 J	40 UD	4 J	10 U
Benzo(k)fluoranthene		NS	10 U	100 U	4 J	40 UD	5 J	10 U
Benzo[a]pyrene		NS	10 U	100 U	7 J	40 UD	8 J	10 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-06	MW-06 DL	MW-07	MW-07 DL	MW-07 RE	MW-07
	Sample Date	GW Standards ug/L	06/06/01	06/06/01	05/12/99	05/12/99	05/12/99	06/06/01
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Bis(2-chloroethoxy)methane		5*	5 U	51 U Y	5 UD	20 UD Y	5 UD	5 U
Bis(2-chloroethyl)ether		1	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
Bis(2-chloroisopropyl) ether		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Bis(2-ethylhexyl)phthalate (BEHP)		5	5 U	51 U Y	2 J	20 UD Y	3 J	5 U
Butyl benzyl phthalate		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Carbazole		NS	15	16 J	3 J	40 UD	3 J	1 J
Chrysene		NS	5 U	51 U	10	11 JD	11	5 U
Di-n-butyl phthalate		50	10 U	100 U Y	10 UD	40 UD	10 UD	10 U
Di-n-octyl phthalate		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Dibenzo(a,h)anthracene		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Dibenzofuran		NS	5 J	51 U	3 J	20 UD	3 J	5 U
Diethyl phthalate		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Dimethyl phthalate		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Fluoranthene		NS	3 J	100 U	11	12 JD	11	10 U
Fluorene		NS	34	35 J	11	11 JD	11	3 J
Hexachlorobenzene		0.04	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
Hexachlorobutadiene		0.5	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
Hexachlorocyclopentadiene		5*	10 U Y	100 U Y	10 UD Y	40 UD Y	10 UD Y	10 U Y
Hexachloroethane		5*	5 U	51 U Y	5 UD	20 UD Y	5 UD	5 U
Indeno(1,2,3-cd)pyrene		NS	10 U	100 U	3 J	40 UD	4 J	10 U
Isophorone		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
N-Nitrosodiphenylamine		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
N-Nitrosodipropylamine		NS	10 U	100 U	10 UD	40 UD	10 UD	10 U
Naphthalene		NS	720 E	1100 D	280 E	330 D	280 E	220 E
Nitrobenzene		0.4	5 U Y	51 U Y	5 UD Y	20 UD Y	5 UD Y	5 U Y
Pentachlorophenol		1	25 U Y	250 U Y	26 UD Y	100 UD Y	26 UD Y	26 U Y
Phenanthrene		NS	35	37 J	18	19 JD	18	2 J
Phenol		1	1 J	51 U Y	2 J Y	20 UD Y	2 J Y	2 J Y
Pyrene		NS	3 J	100 U	14	12 JD	15	10 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
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O'BRIEN & GERE ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-07 DL	MW-08	MW-08	MW-09	MW-10	MW-11
	Sample Date	GW Standards ug/L	06/06/01	05/12/99	06/05/01	06/06/01	06/05/01	06/07/01
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene		5*	10 U Y	5 UD	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene		3	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
1,3-Dichlorobenzene		3	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
1,4-Dichlorobenzene		3	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
2,4,5-Trichlorophenol		NS	51 U	26 UD	26 U	25 U	26 U	27 U
2,4,6-Trichlorophenol		NS	10 U	5 UD	5 U	5 U	5 U	5 U
2,4-Dichlorophenol		1	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
2,4-Dimethylphenol		1	10 U Y	5 UD Y	5 U Y	5 U Y	1 J	5 U Y
2,4-Dinitrophenol		1	51 U Y	26 UD Y	26 U Y	25 U Y	26 U Y	27 U Y
2,4-Dinitrotoluene		5*	10 U Y	5 UD	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene		5*	10 U Y	5 UD	5 U	5 U	5 U	5 U
2-Chloronaphthalene		NS	20 U	10 UD	10 U	10 U	10 U	11 U
2-Chlorophenol		NS	10 U	5 UD	5 U	5 U	5 U	5 U
2-Methylnaphthalene		NS	27 D	10 UD	10 U	10 U	15	11 U
2-Methylphenol		1	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
2-Nitroaniline		5*	51 U Y	26 UD Y	26 U Y	25 U Y	26 U Y	27 U Y
2-Nitrophenol		NS	10 U	5 UD	5 U	5 U	5 U	5 U
3,3-Dichlorobenzidine		5*	20 U Y	10 UD Y	10 U Y	10 U Y	10 U Y	11 U Y
3-Nitroaniline		5*	51 U Y	26 UD Y	26 U Y	25 U Y	26 U Y	27 U Y
4,6-Dinitro-2-methylphenol		NS	100 U	52 UD	51 U	51 U	51 U	55 U
4-Bromophenyl phenyl ether		NS	20 U	10 UD	10 U	10 U	10 U	11 U
4-Chloro-3-methylphenol		NS	10 U	5 UD	5 U	5 U	5 U	5 U
4-Chloroaniline		5*	10 U Y	5 UD	5 U	5 U	5 U	5 U
4-Chlorophenyl phenyl ether		NS	20 U	10 UD	10 U	10 U	10 U	11 U
4-Methylphenol		1	20 U Y	10 UD Y	10 U Y	10 U Y	10 U Y	11 U Y
4-Nitroaniline		5*	51 U Y	26 UD Y	26 U Y	25 U Y	26 U Y	27 U Y
4-Nitrophenol		NS	51 U	26 UD	26 U	25 U	26 U	27 U
Acenaphthene		NS	20 U	10 UD	10 U	10 U	19	11 U
Acenaphthylene		NS	20 U	10 UD	10 U	10 U	5 J	11 U
Anthracene		NS	20 U	10 UD	10 U	10 U	3 J	11 U
Benzo(a)anthracene		NS	10 U	5 UD	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Benzo(ghi)perylene		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Benzo(k)fluoranthene		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Benzo[a]pyrene		NS	20 U	10 UD	10 U	10 U	10 U	11 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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ENGINEERS, INC.

Table 5
Honeywell
Tonawanda, NY
Semivolatile Organic Compound Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-07 DL	MW-08	MW-08	MW-09	MW-10	MW-11
	Sample Date	GW Standards ug/L	06/06/01	05/12/99	06/05/01	06/06/01	06/05/01	06/07/01
	Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Bis(2-chloroethoxy)methane		5*	10 U Y	5 UD	5 U	5 U	5 U	5 U
Bis(2-chloroethyl)ether		1	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
Bis(2-chloroisopropyl) ether		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Bis(2-ethylhexyl)phthalate (BEHP)		5	10 U Y	5 UD	5 U	5 U	5 U	12 Y
Butyl benzyl phthalate		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Carbazole		NS	20 U	10 UD	10 U	1 J	13	11 U
Chrysene		NS	10 U	5 UD	5 U	5 U	5 U	5 U
Di-n-butyl phthalate		50	20 U	10 UD	10 U	10 U	10 U	11 U
Di-n-octyl phthalate		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Dibenzo(a,h)anthracene		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Dibenzofuran		NS	10 U	5 UD	5 U	5 U	11	5 U
Diethyl phthalate		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Dimethyl phthalate		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Fluoranthene		NS	20 U	10 UD	10 U	10 U	3 J	11 U
Fluorene		NS	3 J	10 UD	10 U	10 U	19	11 U
Hexachlorobenzene		0.04	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
Hexachlorobutadiene		0.5	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
Hexachlorocyclopentadiene		5*	20 U Y	10 UD Y	10 U Y	10 U Y	10 U Y	11 U Y
Hexachloroethane		5*	10 U Y	5 UD	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Isophorone		NS	20 U	10 UD	10 U	10 U	10 U	11 U
N-Nitrosodiphenylamine		NS	20 U	10 UD	10 U	10 U	10 U	11 U
N-Nitrosodipropylamine		NS	20 U	10 UD	10 U	10 U	10 U	11 U
Naphthalene		NS	250 D	10 UD	10 U	10 U	100	11 U
Nitrobenzene		0.4	10 U Y	5 UD Y	5 U Y	5 U Y	5 U Y	5 U Y
Pentachlorophenol		1	51 U Y	26 UD Y	26 U Y	25 U Y	26 U Y	27 U Y
Phenanthrene		NS	20 U	10 UD	10 U	10 U	17	11 U
Phenol		1	10 U Y	5 UD Y	5 U Y	5 U Y	1 J	5 U Y
Pyrene		NS	20 U	10 UD	10 U	10 U	2 J	11 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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ENGINEERS, INC.

Table 6
Honeywell
Tonawanda, NY
Metals Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA GW Standards mg/L	MW-01	MW-01	MW-01 DUP	MW-02	MW-02	MW-03
	Sample Date		05/12/99	06/05/01	06/05/01	05/12/99	06/09/01	05/12/99
	Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum		NS	32.2	22.6	22.6	3.12	0.0709 J	9.34
Antimony		0.003	0.0016 UD	0.0027 J	0.0018 J	0.0017 J	0.0062 J Y	0.0016 UD
Arsenic		0.025	0.0019 UD	0.0016 U	0.0016 U	0.0037 J	0.0076	0.0057
Barium		1	0.0163 J	0.0122 J	0.0123 J	0.102	0.0644 J	0.157
Beryllium		NS	0.0039 J	0.0029 J	0.0029 J	0.00016 J	0.00023 J	0.00039 J
Cadmium		5	0.0058	0.00095 J	0.0012 J	0.00042 UD	0.00024 U	0.00042 UD
Calcium		NS	273	294	290	512	504	227
Chromium		0.050	0.156 Y	0.131 Y	0.131 Y	0.0121	0.0047 J	0.0209
Cobalt		NS	0.0016 UD	0.00093 U	0.00093 U	0.0016 UD	0.00093 U	0.0016 UD
Copper		0.2	0.0059 J	0.0012 J	0.0017 J	0.0112	0.0019 J	0.0179
Cyanide		0.2	0.54 Y	0.50 Y	0.39 Y	3.4 Y	2.10 Y	1.2 Y
Iron		0.3	371 Y	307 Y	300 Y	4.4 Y	9.15 Y	10.8 Y
Lead		0.025	0.0011 UD	0.00066 U	0.00066 U	0.0166	0.0016 J	0.0333 Y
Magnesium		NS	78.0	100	98.1	119	136	29.4
Manganese		0.3	4.34 Y	4.52 Y	4.43 Y	0.786 Y	2.69 Y	0.958 Y
Mercury		0.0007	0.00011 UD	0.00018 U	0.00018 U	0.00014 J	0.00018 U	0.00016 J
Nickel		0.1	0.0455 J	0.0400 J	0.0414 J	0.0074 J	0.0046 J	0.0116 J
Potassium		NS	5.13	4.37 J	4.38 J	16.3	13.8	5.19
Selenium		0.05	0.0145	0.0047 J	0.0057	0.0036 UD	0.0026 J	0.0036 UD
Silver		0.05	0.0010 UD	0.00073 U	0.00073 U	0.0010 UD	0.00073 U	0.0010 UD
Sodium		20	30.8 Y	37.4 Y	36.5 Y	87.1 Y	112 Y	48.8 Y
Thallium		NS	0.0038 UD	0.0036 U	0.0036 U	0.0038 UD	0.0036 U	0.0038 UD
Vanadium		NS	0.0126 J	0.0075 J	0.0075 J	0.0052 J	0.0021 J	0.0152 J
Zinc		NS	0.351	0.277	0.281	0.0331	0.00097 U	0.117

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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Table 6
Honeywell
Tonawanda, NY
Metals Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-03	MW-04	MW-04	MW-05	MW-05	MW-06
	Sample Date	GW Standards mg/L	06/09/01	05/12/99	06/09/01	05/12/99	06/07/01	05/12/99
	Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum		NS	0.0118 U	4.4	0.0118 U	12.4	0.0118 U	10.7
Antimony		0.003	0.0018 J	0.0016 UD	0.0024 J	0.0016 UD	0.0056 J Y	0.0018 J
Arsenic		0.025	0.0016 U	0.0034 J	0.0078	0.0082	0.0020 J	0.0029 J
Barium		1	0.0300 J	0.135	0.0572 J	0.200	0.0626 J	0.0313 J
Beryllium		NS	0.000076 U	0.00029 J	0.000076 U	0.00061 J	0.000076 U	0.0012 J
Cadmium		5	0.00024 U	0.00042 UD	0.00024 U	0.00042 UD	0.00024 U	0.0020 J
Calcium		NS	115	240	290	161	170	546
Chromium		0.050	0.0015 J	0.0162	0.0036 J	0.0657 Y	0.0057 J	0.109 Y
Cobalt		NS	0.00093 U	0.0031 J	0.00093 U	0.0089 J	0.0026 J	0.0094 J
Copper		0.2	0.00089 J	0.0089 J	0.00049 U	0.105	0.0056 J	0.0270
Cyanide		0.2	0.36 Y	0.78 Y	0.63 Y	0.46 Y	0.53 Y	4.9 Y
Iron		0.3	0.228	7.6 Y	8.00 Y	24.5 Y	0.549 Y	50.6 Y
Lead		0.025	0.00087 J	0.0618 Y	0.00066 U	0.212 Y	0.0024 J	0.0238
Magnesium		NS	14.8	58.7	43.8	166	182	80.8
Manganese		0.3	0.363 Y	1.44 Y	1.70 Y	3.98 Y	3.57 Y	20.4 Y
Mercury		0.0007	0.00018 U	0.00011 UD	0.00018 U	0.00038	0.00018 U	0.00035
Nickel		0.1	0.00097 J	0.0061 J	0.0021 J	0.150 Y	0.0447 J	0.0594
Potassium		NS	5.69	2.34 J	3.25 J	3.82 J	2.66 J	30.4
Selenium		0.05	0.0018 U	0.0036 UD	0.0018 U	0.0036 UD	0.0020 J	0.0180 UD
Silver		0.05	0.00073 U	0.0010 UD	0.00073 U	0.0012 J	0.00073 U	0.0010 UD
Sodium		20	9.77	49.1 Y	56.0 Y	67.0 Y	66.5 Y	54.5 Y
Thallium		NS	0.0036 U	0.0045 J	0.0036 U	0.0038 UD	0.0036 U	0.0190 UD
Vanadium		NS	0.00041 J	0.0069 J	0.0011 J	0.0279 J	0.0029 J	0.185
Zinc		NS	0.0032 J	0.0651	0.00097 U	0.108	0.00097 U	0.152

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, — - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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DBF File: N:\1163\22900\TEMP.DBF
FXP File: N:\1163\22900\METALSMW.FXP

File Number: 1163.22900

O'BRIEN & GERE ENGINEERS, INC.

Table 6
Honeywell
Tonawanda, NY
Metals Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA GW Standards mg/L	MW-06	MW-07	MW-07	MW-08	MW-08	MW-09
	Sample Date		06/06/01	05/12/99	06/06/01	05/12/99	06/05/01	06/06/01
	Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum		NS	13.2	37.6	18.6	35.6	0.734	0.0162 J
Antimony		0.003	0.0019 J	0.0073 J Y	0.0081 J Y	0.0016 UD	0.0014 U	0.0014 U
Arsenic		0.025	0.0016 U	0.0373 Y	0.0440 Y	0.0092	0.0021 J	0.0021 J
Barium		1	0.0112 J	0.0730 J	0.0081 J	0.321	0.0317 J	0.0648 J
Beryllium		NS	0.0017 J	0.0052	0.0027 J	0.0018 J	0.000076 U	0.000076 U
Cadmium		5	0.00024 U	0.0083	0.0024 J	0.00063 J	0.00024 U	0.00024 U
Calcium		NS	490	355	309	140	91.2	246
Chromium		0.050	0.0661 Y	0.301 Y	0.220 Y	0.0626 Y	0.0068 J	0.0031 J
Cobalt		NS	0.00093 U	0.0213 J	0.0297 J	0.0161 J	0.00093 U	0.00093 U
Copper		0.2	0.00049 U	0.130	0.0096 J	0.0429	0.0017 J	0.00091 J
Cyanide		0.2	1.80 Y	3.6 Y	0.75 Y	0.52 Y	0.40 Y	1.10 Y
Iron		0.3	77.6 Y	383 Y	277 Y	49.6 Y	2.04 Y	2.96 Y
Lead		0.025	0.0013 J	0.158 Y	0.143 Y	0.0515 Y	0.00066 U	0.00084 J
Magnesium		NS	53.1	56.6	34.1	190	198	40.9
Manganese		0.3	0.961 Y	4.55 Y	2.15 Y	0.822 Y	0.105	2.72 Y
Mercury		0.0007	0.00018 U	0.0014 Y	0.00018 U	0.00011 UD	0.00018 U	0.00018 U
Nickel		0.1	0.0029 J	0.351 Y	0.259 Y	0.0507	0.0030 J	0.0046 J
Potassium		NS	9.36	8.86	7.10	12.0	3.92 J	18.9
Selenium		0.05	0.0018 U	0.0152	0.0041 J	0.0036 UD	0.0018 U	0.0021 J
Silver		0.05	0.00073 U	0.0010 UD	0.00073 U	0.0010 UD	0.00073 U	0.00073 U
Sodium		20	30.0 Y	18.6	12.8	118 Y	131 Y	36.0 Y
Thallium		NS	0.0036 U	0.0038 UD	0.0036 U	0.0038 UD	0.0036 U	0.0036 U
Vanadium		NS	0.0141 J	0.0560	0.0154 J	0.0607	0.0021 J	0.00072 J
Zinc		NS	0.0623	0.832	0.597	0.146	0.00097 U	0.00097 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed
* - principal organic contaminant standard for ground water is 5 ug/L.

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O'BRIEN & GERE ENGINEERS, INC.

Table 6
Honeywell
Tonawanda, NY
Metals Data
Ground Water Samples

Compound	Sample ID	NYSDEC Class GA	MW-10	MW-10 DL	MW-11
	Sample Date	GW Standards mg/L	06/05/01	06/05/01	06/07/01
	Units		mg/L	mg/L	mg/L
Aluminum		NS	5.90	6.09 D	0.0128 J
Antimony		0.003	0.0032 J Y	0.0076 JD Y	0.0014 U
Arsenic		0.025	0.0016 U	0.0080 UD	0.0016 J
Barium		1	0.0288 J	0.0326 JD	0.332
Beryllium		NS	0.0023 J	0.0022 JD	0.000076 U
Cadmium		5	0.0030 J	0.0034 JD	0.00024 U
Calcium		NS	491	492 D	85.8
Chromium		0.050	0.0285	0.0534 D Y	0.0062 J
Cobalt		NS	0.00093 U	0.0046 UD	0.00093 U
Copper		0.2	0.0056 J	0.0058 JD	0.0043 J
Cyanide		0.2	0.10	---	0.022
Iron		0.3	885 E Y	879 D Y	0.0312 J
Lead		0.025	0.00066 U	0.0033 UD	0.00066 U
Magnesium		NS	204	211 D	177
Manganese		0.3	36.6 E Y	42.3 D Y	0.914 Y
Mercury		0.0007	0.00018 U	---	0.00018 U
Nickel		0.1	0.00071 U	0.0036 UD	0.0142 J
Potassium		NS	16.0	14.7 JD	12.5
Selenium		0.05	0.0350	0.0320 D	0.0048 J
Silver		0.05	0.00073 U	0.0036 UD	0.00073 U
Sodium		20	23.1 Y	20.2 D Y	34.4 Y
Thallium		NS	0.0036 U	0.0180 UD	0.0036 U
Vanadium		NS	0.0049 J	0.0062 JD	0.0024 J
Zinc		NS	0.358	0.368 D	0.00097 U

NOTES: U - not detected, J - estimated value, E - outside linear range, D - from diluted analysis, Y - exceeds GW Standard, --- - not analyzed.
* - principal organic contaminant standard for ground water is 5 ug/L.

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File Number: 1163.22900

O'BRIEN & GERE
ENGINEERS, INC.

Table 7
AlliedSignal Inc
Tonawanda, NY
Volatile Organic Compound Data
Storm Water Samples

	Sample ID	SW Inlet A	SW Inlet A	SW Inlet B	SW Inlet B	SW Outfall #1	SW Outfall #1	SW Outfall #2
	Sample Date	05/11/1999	12/11/2001	05/11/1999	12/11/2001	05/10/1999	12/11/2001	05/10/1999
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
1,1,1-Trichloroethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.1 J
1,1,2,2-Tetrachloroethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
1,1,2-Trichloroethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
1,1-Dichloroethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
1,1-Dichloroethene		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
1,2-Dichloroethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
1,2-Dichloropropane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
2-Butanone (MEK)		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
2-Hexanone		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
4-Methyl-2-pentanone (MIBK)		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Acetone		2 J	10 U	4 J	10 U	4 J	3 J	6 J
Benzene		0.5 UD	10 U	0.5 UD	10 U	6	6 J	0.5 UD
Bromodichloromethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.2 J
Bromoform		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
Bromomethane		1 UD	10 U	1 UD	10 U	1 UD	10 U	1 UD
Carbon disulfide		0.5 UD	10 U	0.5 UD	10 U	0.2 J	0.8 J	0.5 UD
Carbon tetrachloride		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
Chlorobenzene		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
Chloroethane		1 UD	10 U	1 UD	10 U	1 UD	10 U	1 UD
Chloroform		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.3 J
Chloromethane		1 UD	10 U	1 UD	10 U	1 UD	10 U	1 UD
Dibromochloromethane		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
Ethene, 1,2-dichloro-, (E)-		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
Ethylbenzene		0.5 UD	10 U	0.5 UD	10 U	0.4 J	0.6 J	0.5 UD
Methylene chloride		2 UD	1 J	2 UD	1 J	2 UD	1 J	2 UD
Styrene		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
Tetrachloroethene		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.4 J
Toluene		0.1 J	10 U	0.5 UD	10 U	0.9	2 J	0.5 UD
Trichloroethene		0.5 UD	10 U	0.5 UD	10 U	0.9	10 U	0.2 J
Vinyl chloride		1 UD	10 U	1 UD	10 U	1 UD	10 U	0.5 J
Xylene (total)		0.5 UD	10 U	0.5 UD	10 U	2	2 J	0.5 UD
cis-1,2-Dichloroethene		0.5 UD	10 U	0.5 UD	10 U	8	0.8 J	1
cis-1,3-Dichloropropylene		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD
trans-1,3-Dichloropropene		0.5 UD	10 U	0.5 UD	10 U	0.5 UD	10 U	0.5 UD

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed.

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DBF File: N:\1163\22900\TEMP.DBF
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File Number: 1163.22900

O'BRIEN & GERE ENGINEERS, INC.

Table 7
AlliedSignal Inc
Tonawanda, NY
Volatile Organic Compound Data
Storm Water Samples

	Sample ID	SW Outfall #2
	Sample Date	12/11/2001
	Units	ug/L
Compound		
1,1,1-Trichloroethane		10 U
1,1,2,2-Tetrachloroethane		10 U
1,1,2-Trichloroethane		10 U
1,1-Dichloroethane		10 U
1,1-Dichloroethene		10 U
1,2-Dichloroethane		10 U
1,2-Dichloropropane		10 U
2-Butanone (MEK)		10 U
2-Hexanone		10 U
4-Methyl-2-pentanone (MIBK)		10 U
Acetone		3 J
Benzene		10 U
Bromodichloromethane		10 U
Bromoform		10 U
Bromomethane		10 U
Carbon disulfide		10 U
Carbon tetrachloride		10 U
Chlorobenzene		10 U
Chloroethane		10 U
Chloroform		10 U
Chloromethane		10 U
Dibromochloromethane		10 U
Ethene, 1,2-dichloro-, (E)-		10 U
Ethylbenzene		10 U
Methylene chloride		1 J
Styrene		10 U
Tetrachloroethene		10 U
Toluene		10 U
Trichloroethene		10 U
Vinyl chloride		0.5 J
Xylene (total)		10 U
cis-1,2-Dichloroethene		0.7 J
cis-1,3-Dichloropropylene		10 U
trans-1,3-Dichloropropene		10 U

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed

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DBF File: N:\1163\22900\TEMP.DBF
FXP File: N:\1163\22900\8260W.FXP

File Number: 1163.22900

O'BRIEN & GERE
ENGINEERS, INC.

Table 8
AlliedSignal Inc
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Water Samples

	Sample ID	SW Inlet A	SW Inlet A	SW Inlet B	SW Inlet B	SW Outfall #1	SW Outfall #1	SW Outfall #2
	Sample Date	05/11/1999	12/11/2001	05/11/1999	12/11/2001	05/10/1999	12/11/2001	05/10/1999
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
1,2,4-Trichlorobenzene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
1,2-Dichlorobenzene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
1,3-Dichlorobenzene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
1,4-Dichlorobenzene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2,4,5-Trichlorophenol		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
2,4,6-Trichlorophenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2,4-Dichlorophenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2,4-Dimethylphenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2,4-Dinitrophenol		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
2,4-Dinitrotoluene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2,6-Dinitrotoluene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2-Chloronaphthalene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
2-Chlorophenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2-Methylnaphthalene		10 UD	10 U	10 UD	10 U	4 J	6 J	10 UD
2-Methylphenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
2-Nitroaniline		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
2-Nitrophenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
3,3-Dichlorobenzidine		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
3-Nitroaniline		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
4,6-Dinitro-2-methylphenol		50 UD	25 U	50 UD	26 U	51 UD	25 U	50 UD
4-Bromophenyl phenyl ether		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
4-Chloro-3-methylphenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
4-Chloroaniline		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
4-Chlorophenyl phenyl ether		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
4-Methylphenol		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
4-Nitroaniline		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
4-Nitrophenol		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
Acenaphthene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Acenaphthylene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Anthracene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Benzo(a)anthracene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Benzo(b)fluoranthene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Benzo(ghi)perylene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Benzo(k)fluoranthene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Benzo[a]pyrene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed.

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DBF File: N:\1163\22900\TEMP.DBF
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File Number: 1163.22900

O'BRIEN & GERE ENGINEERS, INC.

Table 8
AlliedSignal Inc
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Water Samples

	Sample ID	SW Inlet A	SW Inlet A	SW Inlet B	SW Inlet B	SW Outfall #1	SW Outfall #1	SW Outfall #2
	Sample Date	05/11/1999	12/11/2001	05/11/1999	12/11/2001	05/10/1999	12/11/2001	05/10/1999
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
Bis(2-chloroethoxy)methane		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Bis(2-chloroethyl)ether		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Bis(2-chloroisopropyl) ether		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Bis(2-ethylhexyl)phthalate (BEHP)		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Butyl benzyl phthalate		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Carbazole		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Chrysene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Di-n-butyl phthalate		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Di-n-octyl phthalate		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Dibenzo(a,h)anthracene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Dibenzofuran		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Diethyl phthalate		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Dimethyl phthalate		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Fluoranthene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Fluorene		10 UD	10 U	10 UD	10 U	10 UD	2 J	10 UD
Hexachlorobenzene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Hexachlorobutadiene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Hexachlorocyclopentadiene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Hexachloroethane		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Indeno(1,2,3-cd)pyrene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Isophorone		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
N-Nitrosodiphenylamine		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
N-Nitrosodipropylamine		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD
Naphthalene		10 UD	10 U	10 UD	10 U	25	57	10 UD
Nitrobenzene		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Pentachlorophenol		25 UD	25 U	25 UD	26 U	25 UD	25 U	25 UD
Phenanthrene		10 UD	10 U	10 UD	10 U	10 UD	2 J	10 UD
Phenol		5 UD	10 U	5 UD	10 U	5 UD	10 U	5 UD
Pyrene		10 UD	10 U	10 UD	10 U	10 UD	10 U	10 UD

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed.

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File Number: 1163.22900

O'BRIEN & GERE ENGINEERS, INC.

Table 8
AlliedSignal Inc
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Water Samples

	Sample ID	SW Outfall #2
	Sample Date	12/11/2001
	Units	ug/L
Compound		
1,2,4-Trichlorobenzene		10 U
1,2-Dichlorobenzene		10 U
1,3-Dichlorobenzene		10 U
1,4-Dichlorobenzene		10 U
2,4,5-Trichlorophenol		26 U
2,4,6-Trichlorophenol		10 U
2,4-Dichlorophenol		10 U
2,4-Dimethylphenol		10 U
2,4-Dinitrophenol		26 U
2,4-Dinitrotoluene		10 U
2,6-Dinitrotoluene		10 U
2-Chloronaphthalene		10 U
2-Chlorophenol		10 U
2-Methylnaphthalene		10 U
2-Methylphenol		10 U
2-Nitroaniline		26 U
2-Nitrophenol		10 U
3,3-Dichlorobenzidine		10 U
3-Nitroaniline		26 U
4,6-Dinitro-2-methylphenol		26 U
4-Bromophenyl phenyl ether		10 U
4-Chloro-3-methylphenol		10 U
4-Chloroaniline		10 U
4-Chlorophenyl phenyl ether		10 U
4-Methylphenol		10 U
4-Nitroaniline		26 U
4-Nitrophenol		26 U
Acenaphthene		10 U
Acenaphthylene		10 U
Anthracene		10 U
Benzo(a)anthracene		10 U
Benzo(b)fluoranthene		10 U
Benzo(ghi)perylene		10 U
Benzo(k)fluoranthene		10 U
Benzo[a]pyrene		10 U

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed.

Date Printed: 01/22/2002 15:26:38
DBF File: N:\1163\22900\TEMP.DBF
FXP File: N:\1163\22900\8270W.FXP

File Number: 1163.22900

O'BRIEN & GERE
ENGINEERS, INC.

Table 8
AlliedSignal Inc
Tonawanda, NY
Semivolatile Organic Compound Data
Storm Water Samples

	Sample ID	SW Outfall #2
	Sample Date	12/11/2001
	Units	ug/L
Compound		
Bis(2-chloroethoxy)methane		10 U
Bis(2-chloroethyl)ether		10 U
Bis(2-chloroisopropyl) ether		10 U
Bis(2-ethylhexyl)phthalate (BEHP)		10 U
Butyl benzyl phthalate		10 U
Carbazole		10 U
Chrysene		10 U
Di-n-butyl phthalate		10 U
Di-n-octyl phthalate		10 U
Dibenzo(a,h)anthracene		10 U
Dibenzofuran		10 U
Diethyl phthalate		10 U
Dimethyl phthalate		10 U
Fluoranthene		10 U
Fluorene		10 U
Hexachlorobenzene		10 U
Hexachlorobutadiene		10 U
Hexachlorocyclopentadiene		10 U
Hexachloroethane		10 U
Indeno(1,2,3-cd)pyrene		10 U
Isophorone		10 U
N-Nitrosodiphenylamine		10 U
N-Nitrosodipropylamine		10 U
Naphthalene		22
Nitrobenzene		10 U
Pentachlorophenol		26 U
Phenanthrene		10 U
Phenol		10 U
Pyrene		10 U

NOTES: U - Not detected. J - Estimated value. — - Not analyzed.

Date Printed: 01/22/2002 15:26:38
DBF File: N:\1163\22900\TEMP.DBF
FXP File: N:\1163\22900\8270W.FXP

File Number: 1163.22900

O'BRIEN & GERE
ENGINEERS, INC.

Table 9
AlliedSignal Inc
Tonawanda, NY
Metals Data
Storm Water Samples

	Sample ID	SW Inlet A	SW Inlet A	SW Inlet B	SW Inlet B	SW Outfall #1	SW Outfall #1	SW Outfall #2
	Sample Date	05/11/1999	12/11/2001	05/11/1999	12/11/2001	05/10/1999	12/11/2001	05/10/1999
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound								
Aluminum		0.555	2.51	0.109	0.910	0.856	1.04	0.290
Antimony		0.0016 UD	0.0600 U	0.0028 J	0.0600 U	0.0016 UD	0.0600 U	0.0035 J
Arsenic		0.0040 J	0.01 U	0.0019 UD	0.01 U	0.0019 UD	0.01 U	0.0019 UD
Barium		0.0524 J	0.200 U	0.0368 J	0.200 U	0.0467 J	0.200 U	0.0380 J
Beryllium		0.00013 UD	0.0050 U	0.00026 J	0.0050 U	0.00033 J	0.0050 U	0.00015 J
Cadmium		0.00042 UD	0.0050 U	0.00055 J	0.0050 U	0.0012 J	0.0050 U	0.00081 J
Calcium		123	156	71.4	83.4	158	182	72.5
Chromium		0.0074 J	0.0103	0.0054 J	0.01 U	0.0153	0.0178	0.0063 J
Cobalt		0.0016 UD	0.0500 U	0.0029 J	0.0500 U	0.0016 UD	0.0500 U	0.0027 J
Copper		0.0022 J	0.0250 U	0.0020 J	0.0250 U	0.0010 J	0.0250 U	0.0062 J
Cyanide		0.01 UD	0.01	0.01 UD	0.01 U	0.01 UD	0.12	0.01 UD
Iron		2.31	8.99	1.67	2.21	57.5	77.1	1.11
Lead		0.0016 J	0.0080	0.0011 UD	0.0030 U	0.0011 UD	0.0030 U	0.0030 J
Magnesium		34.7	45.1	14.2	19.0	44.7	51.2	13.8
Manganese		0.995	1.24	1.53	0.652	1.59	1.92	0.743
Mercury		0.00011 UD	0.00020 U	0.00011 UD	0.00020 U	0.00011 UD	0.00020 U	0.00011 UD
Nickel		0.0013 UD	0.0400 U	0.0033 J	0.0400 U	0.0066 J	0.0400 U	0.0034 J
Potassium		4.93 J	5.00 U	3.55 J	5.00 U	6.4	5.02	3.61 J
Selenium		0.0036 UD	0.0050 U	0.0036 UD	0.0050 U	0.0036 UD	0.0050 U	0.0036 UD
Silver		0.0010 UD	0.01 U	0.0010 UD	0.01 U	0.0010 UD	0.01 U	0.0010 UD
Sodium		43.2	43.2	23.5	19.5	41.2	39.0	23.4
Thallium		0.0038 UD	0.01 U	0.0073 J	0.01 U	0.0061 J	0.01 U	0.0065 J
Vanadium		0.0018 J	0.0500 U	0.00060 UD	0.0500 U	0.00063 J	0.0500 U	0.00060 UD
Zinc		0.0193	0.418	0.0174	0.0200 U	0.0577	0.0200 U	0.0295

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed.

Date Printed: 01/22/2002 15:16:29
DBF File: N:\1163\22900\TEMP.DBF
FXP File: N:\1163\22900\METALSW.FXP

File Number: 1163.22900

O'BRIEN & GERE
ENGINEERS, INC.

Table 9
AlliedSignal Inc
Tonawanda, NY
Metals Data
Storm Water Samples

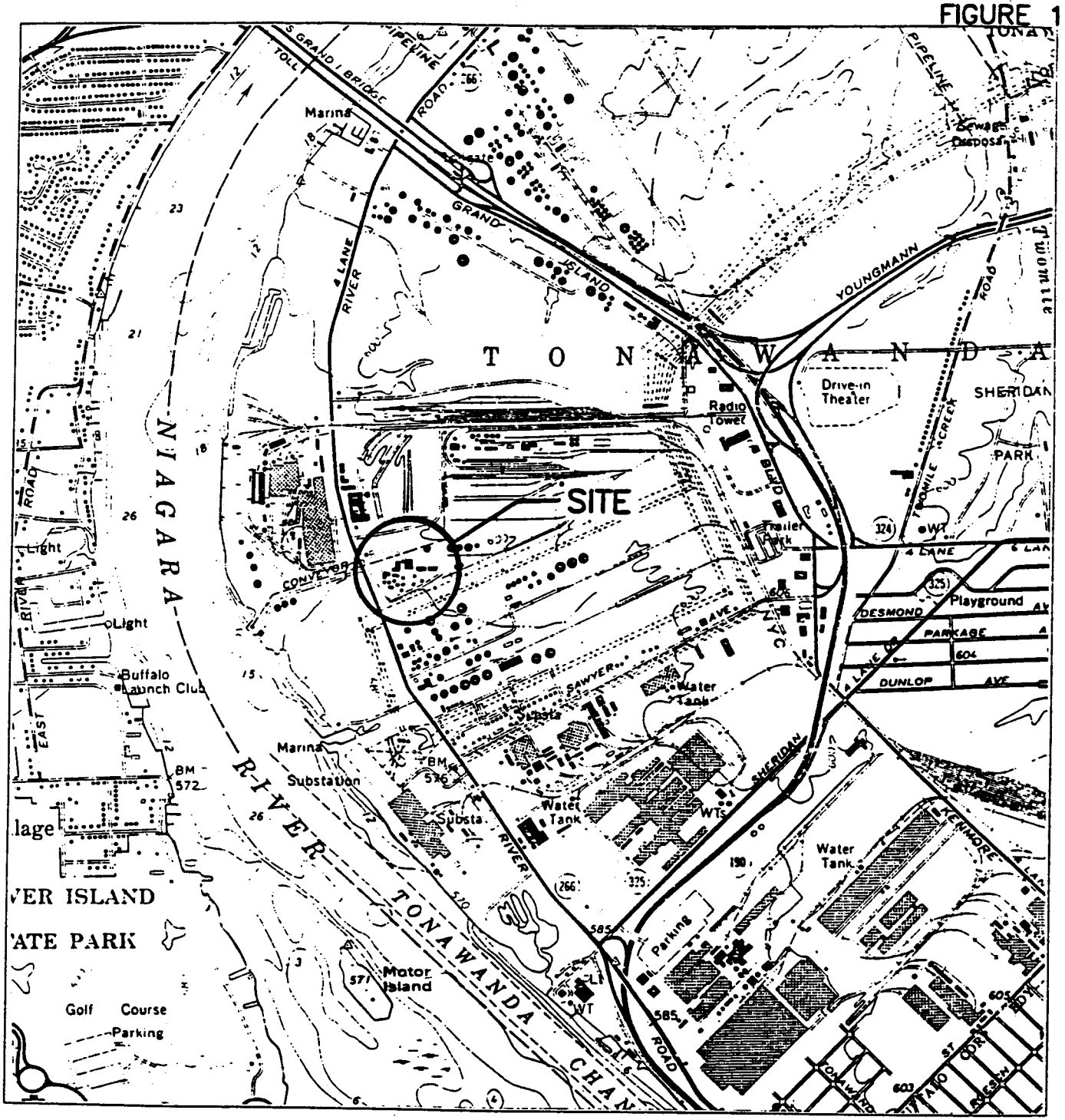
	Sample ID	SW Outfall #2
	Sample Date	12/11/2001
	Units	mg/L
Compound		
Aluminum		1.51
Antimony		0.0600 U
Arsenic		0.01 U
Barium		0.200 U
Beryllium		0.0050 U
Cadmium		0.0050 U
Calcium		84.9
Chromium		0.01 U
Cobalt		0.0500 U
Copper		0.0250 U
Cyanide		0.02
Iron		2.25
Lead		0.0098
Magnesium		18.2
Manganese		0.466
Mercury		0.00020 U
Nickel		0.0400 U
Potassium		5.00 U
Selenium		0.0050 U
Silver		0.01 U
Sodium		23.4
Thallium		0.01 U
Vanadium		0.0500 U
Zinc		0.0200 U

NOTES: U - Not detected. J - Estimated value. --- - Not analyzed.

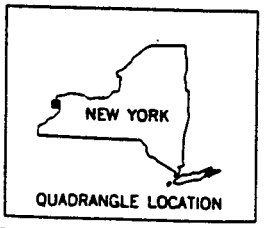
Date Printed: 01/22/2002 15:16:29
DBF File: N:\1163\22900\TEMP.DBF
FXP File: N:\1163\22900\METALSW.FXP

File Number: 1163.22900

FIGURE 1



ADAPTED FROM: BUFFALO NW, N.Y.–ONT. 7.5 MIN. SERIES QUAD. (TOPO.)



STATE LOCATION MAP

FORMER ALLIED SPECIALTY CHEMICAL SITE TONAWANDA, NEW YORK

SITE LOCATION MAP

FILE NO.1163.22900-001
DATE:2/18/99

1"=2000'

2000 0 2000 4000

O'BRIEN & GERE ENGINEERS INC.

DWG PATH:I:\DV71\PROJECTS\1163\22900\DWG\001.DWG 1=1

PLOT DATE:2/18/99

I:\DIV71\PROJECTS\1163\26080\DWGS\001.DWG

OUTFALL #2

OUTFALL #1

MH-E

48" SEWER LINE

PROCESS BLDG.

WAX STORAGE WAREHOUSE

WAX PRODUCTION BLDG.

FD3

TRUCK RAMP

HEAT EXCHANGERS

COMPRESSOR BLDG.

FD4

FD5

PUMP HOUSE

MW-12 (DRY)

577 578 579 580

BLDG. 4 & 5 WAREHOUSE

581 582

EXTRUDER WAREHOUSE

(578.35) MW-04

MW-03 (576.57)

ECE-1

FD2

FD1

STORES & MACHINE SHOP

(578.18) MW-02

UNITS #4 & #5

FORMER PIT

577 (578.86) MW-11 (578.43)

578

MW-9

MW-06 (579.07)

MW-01(579.13)

STORAGE

OFFICE BLDG.

LABRATORY BLDG.

ETHYLENE STORAGE TANKS

MW-08 (582.27)

MW-07 (579.02)

MW-05(579.80)

582 581 580

36" SEWER LINE

LOCKER BLDG.

MW-10 (578.54)

579

STORM INLET B

STORM INLET A

SOURCE: ADAPTED FROM ALLIED CHEMICAL SPECIALTY CHEMICALS DIVISION PLOT PLAN TONAWANDA DWG# 17-2-00-1(9/15/76), EXCEPT FOR WELLS AND FORMER PIT ADPAPTED FROM ERM NORTHEAST FINAL QUARTERLY MONITORING REPORT, POST-REMEDIAL GROUND WATER SAMPLING REPORT (8/92). 8/24/99

1/22/02

FIGURE 2

LEGEND

- MANHOLE
- SHORE LINE
- PROPERTY LINE
- MONITORING WELL LOCATION
- FLOOR DRAIN
- CATCH BASIN
- (579.80) GROUND WATER ELEVATION
- 580 GROUND WATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

NOTE: FEATURE LOCATIONS ARE APPROXIMATE.

FORMER ALLIED SPECIALTY CHEMICAL SITE
TONAWANDA, NEW YORK

GROUND WATER ELEVATIONS (JUNE 5, 2001)

1"=80' 80 0 80

AUGUST 1999

1163.26080.001

O'BRIEN & GERE ENGINEERS INC.

Appendix A

Laboratory Case Narratives Sediment, Ground Water, and Storm Water Samples

SEDIMENT SAMPLES

ANALYTICAL PACKAGE

for

Honeywell
Tonawanda, NY
Soil Samples

Soil samples collected: November 15, 2000

Volume 1 of 4

Prepared for:

O'Brien & Gere Engineers, Inc.
5000 Brittonfield Parkway
P.O. Box 4873
Syracuse, NY 13221

Prepared by:

O'Brien & Gere Laboratories, Inc.
5000 Brittonfield Parkway
Suite 300, P.O. Box 4942
Syracuse, NY 13221

Authorized _____

Date 12.19.00

Reviewed _____

Date 12/20/00

TABLE OF CONTENTS

Sample Data Summary Package

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
Storm Inlet B	R6023	8260B	8270C			6010B	9010B/ 9014 2540-G
Storm Inlet A	R6024	8260B	8270C			6010B	9010B/ 9014 2540-G
Storm Inlet A	R6024MS	8260B	8270C			6010B	9010B/ 9014
Storm Inlet A	R6024MSD	8260B	8270C			6010B	9010B/ 9014
Storm Inlet A	R6024D					6010B	9010B/ 9014 2540-G
Outfall #1	R6025	8260B	8270C			6010B	9010B/ 9014 2540-G
Outfall #2	R6026	8260B	8270C			6010B	9010B/ 9014 2540-G
BLIND DUP	R6027	8260B	8270C			6010B	9010B/ 9014 2540-G
QC Trip Blank	R6028	8260B					
Storage Blank	R6029	8260B					

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE(VOA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D at LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
R6023	Soil	11/15/00	11/16/00	Low	11/18/00
R6024	Soil	11/15/00	11/16/00	Low	11/18/00
R6024MS	Soil	11/15/00	11/16/00	Low	11/18/00
R602MSD	Soil	11/15/00	11/16/00	Low	11/18/00
R6025	Soil	11/15/00	11/16/00	Low	11/18, 25/00
R6026	Soil	11/15/00	11/16/00	Low	11/18, 25/00
R6027	Soil	11/15/00	11/16/00	Low	11/18, 25/00
R6028	Water	11/15/00	11/16/00	Low	11/18/00
R6029	Water	11/16/00	11/16/00	Low	11/18/00

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE(BNA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D at LAB	DATE EXTRACTED	DATE ANALYZED
R6023	SOIL	11/15/00	11/16/00	11/17/00	12/7/00
R6024	SOIL	11/15/00	11/16/00	11/17/00	12/7/00
R6024MS	SOIL	11/15/00	11/16/00	11/17/00	12/7/00
R6024MSD	SOIL	11/15/00	11/16/00	11/17/00	12/7/00
R6025	SOIL	11/15/00	11/16/00	11/17/00	12/7/00
R6026	SOIL	11/15/00	11/16/00	11/17/00	12/7/00
R6027	SOIL	11/15/00	11/16/00	11/17/00	12/7/00

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE(BNA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEANUP	DIL/CONC FACTOR
R6023	SOIL	8270C	SONC.	GPC	1X,2X
R6024	SOIL	8270C	SONC.	GPC	20X
R6024MS	SOIL	8270C	SONC.	GPC	20X
R6024MSD	SOIL	8270C	SONC.	GPC	20X
R6025	SOIL	8270C	SONC.	GPC	50X
R6026	SOIL	8270C	SONC.	GPC	100X
R6027	SOIL	8270C	SONC.	GPC	50X

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSIS

Laboratory Sample ID	Matrix	Metals Requested	Date Rec'd at Lab	Date Analyzed
R6023	SOIL	TCL-LIST	11/16/00	12/01/00
R6024	SOIL	TCL-LIST	11/16/00	12/01/00
R6024D	SOIL	TCL-LIST	11/16/00	12/01/00
R6024MS	SOIL	TCL-LIST	11/16/00	12/01/00
R6024MSD	SOIL	TCL-LIST	11/16/00	12/01/00
R6025	SOIL	TCL-LIST	11/16/00	12/01/00
R6026	SOIL	TCL-LIST	11/16/00	12/01/00
R6027	SOIL	TCL-LIST	11/16/00	12/01/00

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSIS

Laboratory Sample ID	Matrix	Metals Requested	Date Rec'd at Lab	Date Analyzed
R6023	SOIL	TCL-LIST	11/16/00	12/01/00
R6024	SOIL	TCL-LIST	11/16/00	12/01/00
R6024D	SOIL	TCL-LIST	11/16/00	12/01/00
R6024MS	SOIL	TCL-LIST	11/16/00	12/01/00
R6024MSD	SOIL	TCL-LIST	11/16/00	12/01/00
R6025	SOIL	TCL-LIST	11/16/00	12/01/00
R6026	SOIL	TCL-LIST	11/16/00	12/01/00
R6027	SOIL	TCL-LIST	11/16/00	12/01/00

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from the Honeywell project located in Tonawanda, NY. New York State Department of Environmental Conservation forms are included in the Sample Data Package.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage, custody inconsistencies and proper preservation. Chain of custodies documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

No discrepancies were noted upon receipt. Cooler temperatures were 4°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	8260B	1
Semivolatile Organics	8270C	1
ICP Metals	6010B	1
Mercury	7471A	1
Cyanide	9010B/9014	1
Percent Total Solids	2540-G	2

1) New York State Department of Environmental Conservation Analytical Services Protocol, October 1995.

2) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.

QUALITY CONTROL

QA/QC results are summarized in the Sample Data Package.

RAW DATA

The raw data is organized in the New York State Department of Environmental Conservation Analytical Services Protocol Category B order of data requirements.

GC/MS Volatile Organics Case Narrative

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package #: 7435
Methodology: 8260B

Analyzed/Reviewed by (Date/Initials): SG 12-19-00

Supervisor/Reviewed by (Date/Initials): 12-19-00

QA/QC Review (Date/Initials): 12/19/00

File Name in G/ Drive: A:\V7435.NAR

GC/MS Volatile Organics

The GC/MS Volatile instruments used a J&W DB-VRX, 60 m x 0.25 mm ID capillary column and a Vocarb 3000 trap.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Water samples had a pH of less than 2.

Laboratory Control Sample

The following compound(s) did not meet laboratory control sample recovery criteria:

LCS No.	Compound	Corrective Action
L112500S3	Chloromethane	1
	Chloroethane	1
	Bromomethane	2

1. This compound exceeded the upper control limit and was not detected in the associated samples. No corrective action was taken.

2. The recovery was below the lower control limit. The compound was not detected in the associated samples. The analyte was not a primary target for the associated samples, which were dilutions or reanalyses for other target analytes.

MS/MSD/MSB

All spike recovery and RPD data met method and/or project specific QC criteria.

Surrogate

The following sample(s) did not meet surrogate recovery criteria:

Sample Description	Sample #	Surrogate	Corrective Action
Storm Inlet A	R6024	Toluene-d8	1

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package #: 7435
Methodology: 8260B

1. The surrogate recovery was confirmed by MS/MSD analysis. No corrective action was taken.

Internal Standards
The internal standard area for the following sample(s) did not meet abundance criteria:

Sample Description	Sample #	Internal Standard	Corrective Action
Storm Inlet A	R6024	Fluorobenzene	1
		Chlorobenzene	1
		1,4-Dichlorobenzene	1
Outfall #1	R6025	1,4-Dichlorobenzene	2

1. The sample, MS and MSD showed similar results. Matrix interference is suspected as the cause of the internal standard failure. No corrective action was taken.

2 The internal standard area met criteria in the reanalysis. No further corrective action was taken. Both results are reported due to calibration excursions associated with the second analysis.

Calibrations
The following continuing calibration compound(s) exceeded method percent drift and/or RRF criteria:

Calibration Date	Instrument	Compound	%D	RRF	Corrective Action
11/25/00	MS#3	Bromomethane	69.4		1

1. Due to system performance the compound does not meet method/QAPP criteria. There were no positive hits for the compound in associated samples (that are reanalyses and dilution only). No corrective action was taken.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Miscellaneous
[R6021] was reanalyzed due to suspected c/o of xylene and ethylbenzene from the previous sample. Both results are reported due to the calibration excursion associated with the second analysis.

[R6024MSD] was analyzed outside the 12 hrs tune clock by 1 minute. No corrective action was taken.

GC/MS Semivolatile Organics Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	7435
Methodology:	8270C
Analyzed/Reviewed by (Date/Initials):	MA 12-19-00
Supervisor/Reviewed by (Date/Initials):	(AD) 12-19-00
QA/QC Review (Date/Initials):	JM 12/19/00
File Name in G/ Drive:	K:\WPWIN60\WPDOCS\7435SV.NAR

GC/MS Semivolatile Organics

The GC/MS Semivolatile instruments used a J&W DB-5MS, 30 m X 0.25 mm ID capillary column.

Holding Times

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample

The following compound(s) did not meet laboratory control sample recovery criteria:

LCS No.	Compound	Corrective Action
L111700S1	4-Chloroaniline	1
	Benzo[a]pyrene	2
	Benzo[g,h,i]perylene	3

1. The LCS was reanalyzed with similar results. The compound failing to meet acceptance criteria was inspected down to the MDL in the asssociated samples with no positive results detected. Results may be biased low. Both sets of data are included. No further corrective action was taken.

2. The LCS was reanalyzed with similar results. The compound was detected in the associated samples and results may be biased low. Both sets of data included. No further corrective action was taken.

3. A GPC problem affected recoveries for this compound. Results are biased low. No corrective action was taken.

MS/MSD/MSB

The following compound(s) did not meet matrix spike/matrix spike duplicate and/or matrix spike blank percent recovery and/or RPD criteria:

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package: 7435
Methodology 8270C

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
MSB01	PS111700S1	2,4-Dinitrotoluene	X		1
Storm Inlet A	R6024	several	X	X	2

1. The compound's recovery was above the UCL. No corrective action was taken.

2. The extract was diluted for high levels of matrix interference. Recoveries may have been affected. With the exception of 2,4-Dinitrotoluene, the associated matrix spike blank showed acceptable results. All failing compounds met percent recovery criteria in the associated LCS. No corrective action was taken.

Surrogates
The following sample(s) did not meet surrogate recovery criteria:

Sample Description	Sample #	Surrogate	Corrective Action
MSB01	PS111700S1	2-Chlorophenol-d4	1
		1,2-Dichlorobenzene-d4	1

1. The control limits for surrogates 2-chlorophenol-d4 and/or 1,2-dichlorobenzene-d4 are advisory only. No corrective action is required.

Internal Standard Areas
The internal standard area for the following sample(s) did not meet abundance criteria:

Sample Description	Sample #	Internal Standard	Corrective Action
Storm Inlet A	R6024	Perylene-d12	1
	R6024MSD	Perylene-d12	1

1. Although the MS met acceptance criteria, the sample, MS and MSD all contained high levels of matrix interference and showed similar results. No further corrective action was taken.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Miscellaneous
Elevated detection limits for sample extract Storm Inlet A[R6024] are due matrix interference.

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package: 7435
Methodology 8270C

A GPC problem affected recoveries for Benzo[g,h,i]perylene and results are biased low for all samples.

The prep blank[PB111701S1] was lost during concentration of the extract. A second prep blank was created using the same solvent lot and surrogate.

Trace Metals Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	7435
Methodology:	ICP metals- 6010B
Analyzed/Reviewed by (Date/Initials):	MT 12-11-00
Supervisor/Reviewed by (Date/Initials):	MT 12-11-00
QA/QC Review (Date/Initials):	12/13/00
File Name in G/ Drive:	G:\NARRATIV\7435OBGE.ICP

Trace Metals

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

MS/MSD AND MS/MSD RPD
The following analytes did not meet matrix spike/matrix spike duplicate percent recovery and/or MS/MSD RPD criteria:

Sample Description	Sample #	Analyte	% REC	RPD	Corrective Action
Storm Inlet A	R6024	Aluminum	X		1
		Antimony	X		1
		Iron	X		1
		Lead	X	X	1
		Manganese	X		1
		Zinc	X		1

1. A post-digestion spike was performed as required. No further corrective action was taken.

Sample Duplicate
The following analyte did not meet sample duplicate RPD criteria:

Sample Description	Sample #	Analyte	RPD	Corrective Action
Storm Inlet A	R6024	Calcium	X	1

1. The failing RPD is attributed to matrix complexity. No corrective action was taken.

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package #: 7435
Methodology: ICP metals- 6010B

ICP Serial Dilution
The following analyte did not meet ICP serial dilution recovery criteria:

Sample Description	Sample #	Analyte	Corrective Action
Storm Inlet A	R6024	Sodium	1

1. No corrective action was required.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Trace Metals Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	7435
Methodology:	Mercury - 7471A
Analyzed/Reviewed by (Date/Initials):	12-11-00 MT
Supervisor/Reviewed by (Date/Initials):	12-11-00 MT
QA/QC Review (Date/Initials):	12/13/00
File Name in G/ Drive:	G:\NARRATIV\7435OBGE.HG

Trace Metals

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

MS/MSD AND MS/MSD RPD
The following analyte did not meet matrix spike/matrix spike duplicate percent recovery and/or MS/MSD RPD criteria:

Sample Description	Sample #	Analyte	% REC	RPD	Corrective Action
Storm Inlet A	R6024	Mercury	X	X	1

1. MS/MSD recoveries were reasonable, suspect matrix complexity. No corrective action was taken.

Sample Duplicate
All sample duplicate RPD data met method and/or project specific QC criteria.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Wet Chemistry Case Narrative

Client:	O'Brien & Gere Engineers
Job Number:	3435.61.76
Package #:	7435
Methodology:	%Total Solids - 2540-G Total cyanide-CLP-B - 9010B/9014
Analyzed/Reviewed by (Date/Initials):	MS 12/8/00
Supervisor/Reviewed by (Date/Initials):	MT 12/8/00
QA/QC Review (Date/Initials):	12/13/00
File Name in G/ Drive:	G:\NARRATIV\7435OBGE.WC

Wet Chemistry

There were no excursions to note. All QC results were within established control limits.

GROUND WATER SAMPLES

ANALYTICAL PACKAGE

for

Honeywell
Tonawanda, NY
Water Samples

Water samples collected: June 5, 6, 7, and 9, 2001

Volume 1 of 4

Prepared for:

O'Brien & Gere Engineers, Inc.
5000 Brittonfield Parkway
P.O. Box 4873
Syracuse, NY 13221

Prepared by:

O'Brien & Gere Laboratories, Inc.
5000 Brittonfield Parkway
Suite 300, P.O. Box 4942
Syracuse, NY 13221

Authorized _____

Date 7.11.01

Reviewed _____

Date 7/12/01

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Sample Data Summary Package

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
MW-10	S6749	8260B	8270C			6010B/ 7470A	335.2
MW-8	S6750	8260B	8270C			6010B/ 7470A	335.2
MW-1	S6751	8260B	8270C			6010B/ 7470A	335.2
MW-7	S6752	8260B	8270C			6010B/ 7470A	335.2
MW-7	S6752MS	8260B	8270C			6010B/ 7470A	335.2
MW-7	S6752MSD	8260B	8270C			6010B/ 7470A	335.2
MW-7	S6752D					6010B/ 7470A	335.2
MW-6	S6753	8260B	8270C			6010B/ 7470A	335.2
MW-9	S6754	8260B	8270C			6010B/ 7470A	335.2
X-1	S6755	8260B	8270C			6010B/ 7470A	335.2
QC Trip Blank	S6756	8260B					
MW-11	S6817	8260B	8270C			6010B/ 7470A	335.2
MW-5	S6818	8260B	8270C			6010B/ 7470A	335.2
QC Trip Blank	S6819	8260B					
Storage Blank	S6820	8260B					
MW-2	S6833	8260B	8270C			6010B/ 7470A	335.2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
MW-4	S6834	8260B	8270C			6010B/ 7470A	335.2
MW-3	S6835	8260B	8270C			6010B/ 7470A	335.2
QC Trip Blank	S6836	8260B					

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE(VOA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D at LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
S6749	Water	6/5/01	6/7/01	Low	6/12/01
S6750	Water	6/5/01	6/7/01	Low	6/12/01
S6751	Water	6/5/01	6/7/01	Low	6/12/01
S6752	Water	6/6/01	6/7/01	Low	6/12/01
S6752MS	Water	6/6/01	6/7/01	Low	6/12/01
S6752MSD	Water	6/6/01	6/7/01	Low	6/12/01
S6753	Water	6/6/01	6/7/01	Low	6/12/01
S6754	Water	6/6/01	6/7/01	Low	6/13/01
S6755	Water		6/7/01	Low	6/12/01
S6756	Water	6/5/01	6/7/01	Low	6/12/01
S6817	Water	6/7/01	6/9/01	Low	6/13/01
S6818	Water	6/7/01	6/9/01	Low	6/13/01
S6819	Water	6/7/01	6/9/01	Low	6/13/01
S6820	Water	6/11/01	6/11/01	Low	6/13/01
S6833	Water	6/9/01	6/11/01	Low	6/13/01
S6834	Water	6/9/01	6/11/01	Low	6/13/01
S6835	Water	6/9/01	6/11/01	Low	6/13/01
S6836	Water	6/9/01	6/11/01	Low	6/13/01

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE(BNA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D at LAB	DATE EXTRACTED	DATE ANALYZED
S6749	Water	6/5/01	6/7/01	6/11/01	6/18/01
S6750	Water	6/5/01	6/7/01	6/11/01	6/18/01
S6751	Water	6/5/01	6/7/01	6/11/01	6/18,19/01
S6752	Water	6/6/01	6/7/01	6/11/01	6/18,19/01
S6752MS	Water	6/6/01	6/7/01	6/11/01	6/18/01
S6752MSD	Water	6/6/01	6/7/01	6/11/01	6/18/01
S6753	Water	6/6/01	6/7/01	6/11/01	6/19/01
S6754	Water	6/6/01	6/7/01	6/11/01	6/20/01
S6755	Water	6/6/01	6/7/01	6/11/01	6/19/01
S6817	Water	6/7/01	6/9/01	6/13/01	6/19/01
S6818	Water	6/7/01	6/9/01	6/13/01	6/19/01
S6833	Water	6/9/01	6/11/01	6/13/01	6/19/01
S6834	Water	6/9/01	6/11/01	6/13/01	6/19/01
S6835	Water	6/9/01	6/11/01	6/13/01	6/19/01

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE(BNA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEANUP	DIL/CONC FACTOR
S6749	Water	8270C	Cont.	None	1x
S6750	Water	8270C	Cont.	None	1x
S6751	Water	8270C	Cont.	None	1x,20x
S6752	Water	8270C	Cont.	None	1x,2x
S6752MS	Water	8270C	Cont.	None	1x
S6752MSD	Water	8270C	Cont.	None	1x
S6753	Water	8270C	Cont.	None	1x,10x
S6754	Water	8270C	Cont.	None	1x
S6755	Water	8270C	Cont.	None	20x
S6817	Water	8270C	Cont.	None	1x
S6818	Water	8270C	Cont.	None	1x
S6833	Water	8270C	Cont.	None	1x
S6834	Water	8270C	Cont.	None	1x
S6835	Water	8270C	Cont.	None	1x

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSIS

Laboratory Sample ID	Matrix	Metals Requested	Date Rec'd at Lab	Date Analyzed
S6749	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6750	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6751	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6752	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6752D	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6752MS	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6752MSD	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6753	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6754	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6755	Water	TCL Metals	06/07/01	06/20/01,07/02/01
S6817	Water	TCL Metals	06/09/01	06/20/01,07/02/01
S6818	Water	TCL Metals	06/09/01	06/20/01,07/02/01
S6833	Water	TCL Metals	06/11/01	06/20/01,07/02/01
S6834	Water	TCL Metals	06/11/01	06/20/01,07/02/01
S6835	Water	TCL Metals	06/11/01	06/20/01,07/02/01

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from the Honeywell project located in Tonawanda, NY. New York State Department of Environmental Conservation forms are included in the Sample Data Package.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage, custody inconsistencies and proper preservation. Chain of custodies documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

Discrepancies noted upon receipt are documented on the case file forms included in the chain of custody section. Cooler temperatures were 3°C, 4°C, and 5°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	8260B	1
Semivolatile Organics	8270C	1
ICP Metals	6010B	1
Mercury	7471A	1
Cyanide	9010B/9014	1

1) New York State Department of Environmental Conservation Analytical Services Protocol, October 1995.

QUALITY CONTROL

QA/QC results are summarized in the Sample Data Package.

RAW DATA

The raw data is organized in the New York State Department of Environmental Conservation Analytical Services Protocol Category B order of data requirements.

GC/MS Volatile Organics Case Narrative

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package: 9162, 9180, 9181, 9186
Methodology: 8260B

Analyzed/Reviewed by (Date/Initials): AK 7-5-01

Supervisor/Reviewed by (Date/Initials): @ 7-5-01

QA/QC Review (Date/Initials): JB 7/6/01

File Name in G/ Drive: C:\MY DOCUMENTS\9162V.NAR.DOC

GC/MS Volatile Organics

The GC/MS Volatile instruments used a J&W DB-VRX, 75 m x 0.45 mm ID capillary column and a Vocarb 3000 trap.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Samples had a pH of less than 2.

Laboratory Control Sample

All spike recoveries met method and/or project specific QC criteria.

MS/MSD

The following compound(s) did not meet matrix spike/matrix spike duplicate percent recovery and/or RPD criteria:

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
MSB01	PS061201W2	Bromomethane	X		1
MW-7	S6752	Bromomethane	X	X	1
		Styrene	X		2
		Methylene chloride		X	3

1. This compound exceeded the upper control limit and was not detected in associated samples. The recovery met acceptance criteria in the LCS. No corrective action was taken.

2. The percent recovery was marginally below the lower control limit and was not detected in associated samples. The LCS met acceptance criteria for this compound. No corrective action was taken.

3. The RPD was marginally above the upper control limit. The compound met acceptance criteria in the LCS. No corrective action was taken.

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package: 9162, 9180, 9181, 9186
Methodology: 8260B

Surrogate
The following sample(s) did not meet surrogate recovery criteria:

Sample Description	Sample #	Surrogate	Corrective Action
LCS02	L061301W2	Toluene-d8	1

1. This surrogate was marginally above the upper control limit. All surrogates met criteria in the duplicate LCS as well as all associated samples. No corrective action was taken.

Internal Standards
All internal standard areas met method and/or project specific QC criteria.

Calibrations
The following continuing calibration compound(s) exceeded method percent drift and/or RRF criteria:

Calibration Date	Instrument	Compound	%D	RRF	Corrective Action
6/12/01	MS#2	1,1,2,2-Tetrachloroethane	-36.9		1

1. The method allows two compounds to fail as long as their percent difference is less than 40%. No corrective action was taken.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Miscellaneous
Some samples were diluted due to high concentrations of non-target compounds. PQL's are elevated for these samples.

GC/MS Semivolatile Organics Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	9162, 9180, 9186
Methodology:	8270C
Analyzed/Reviewed by (Date/Initials):	MA for DJP 7-5-01
Supervisor/Reviewed by (Date/Initials):	7-6-01
QA/QC Review (Date/Initials):	JW 7/9/01
File Name in G/ Drive:	Q:\My Documents\9162sv.nar.doc

GC/MS Semivolatile Organics

The GC/MS Semivolatile instruments used a J&W DB-5MS, 30 m X 0.25 mm ID capillary column.

Holding Times

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Sample MW-2 [S6833] and samples extracted on 6/11/01 were re-extracted outside holding time due to QA/QC excursions and will be reported in a future SDG.

Laboratory Control Sample

The following compound(s) did not meet laboratory control sample recovery criteria:

LCS No.	Compound	Corrective Action
L061101W2	Numerous	1
L061301W2	Hexachlorobutadiene	2
	N-Nitrosodiphenylamine	2
D061301W2	Hexachlorobutadiene	2
	N-Nitrosodiphenylamine	2

1. The LCS was reanalyzed and still did not meet criteria. All samples associated with this LCS will be re-extracted over the holding time. The re-extracts will be reported in a future SDG.

2. The recovery was marginally below the lower control limit in the primary and duplicate LCS. Associated samples were inspected for concentrations down to the MDL and none were detected. No further corrective action was taken.

MS/MSD/MSB

The following compound(s) did not meet matrix spike/matrix spike duplicate percent recovery and/or RPD criteria:

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package #: 9162, 9180, 9186
Methodology: 8270C

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
MSB01	PS061101W2	4-Chloro-3-methylphenol	X		1
		Pentachlorophenol	X		1

1. The recoveries were above the upper control limit and were not detected in the associated samples. No corrective action was taken.

Surrogates
The following sample(s) did not meet surrogate recovery criteria:

Sample Description	Sample #	Surrogate	Corrective Action
MW-8	S6750	2-Fluorobiphenyl	1
MW-2	S6833	Several	2

1. Two of the three base/neutral and/or acid extractable surrogate recoveries passed acceptance criteria. Laboratory or QAPP SOP requires no corrective action.

2. Sample will be re-extracted over the holding time and results will be reported in a future SDG.

Internal Standard Areas
All internal standard areas met method and/or project specific QC criteria.

Calibrations
The following continuing calibration compound(s) exceeded method percent drift and/or RRF criteria:

Calibration Date	Instrument	Compound	%D	RRF	Corrective Action
6/19/01	MS#5	Indeno[1,2,3-cd]pyrene	-33.6		1
		Dibenz[a,h]anthracene	-34.4		1
		Benzo[g,h,i]perylene	-39.3		1

1. The method allows four compounds to fail as long as their percent difference is less than 40%.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Trace Metals Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	9162,9180,9186
Methodology:	ICP metals - 6010B
Analyzed/Reviewed by (Date/Initials):	07-02-01 CT
Supervisor/Reviewed by (Date/Initials):	7-2-01 mt
QA/QC Review (Date/Initials):	7/3/01
File Name in G/ Drive:	G:\NARRATIV\9162OBGEng.icp.wpd

Trace Metals

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

MS/MSD AND MS/MSD RPD
The following analytes did not meet matrix spike/matrix spike duplicate percent recovery criteria:

Sample Description	Sample #	Analyte	% REC	Corrective Action
MW-7	S6752	Aluminum	X	2
		Iron	X	2
		Lead	X	2
		Thallium	X	1

1. A post-digestion spike was performed as required. No further corrective action was taken.

2. The concentration of the analyte in the sample was four times greater than the concentration of the spike added. No corrective action was required.

Sample Duplicate
All sample duplicate RPD data met method and/or project specific QC criteria.

ICP Serial Dilution
All percent differences met method and/or project specific QC criteria.

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	9162,9180,9186
Methodology:	ICP metals - 6010B

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Trace Metals Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.061.076
Package #:	9162,9180,9186
Methodology:	Mercury - 7470A
Analyzed/Reviewed by (Date/Initials):	AT 6-29-01
Supervisor/Reviewed by (Date/Initials):	AT 6-29-01
QA/QC Review (Date/Initials):	6/29/01
File Name in G/ Drive:	G:\NARRATIV\9162obge.hg.wpd

Trace Metals

There were no excursions to note. All QC results were within established control limits.

Wet Chemistry Case Narrative

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.061.076
Package #: 9162,9180,9186
Methodology: Total cyanide - EPA - 335.2

Analyzed/Reviewed by (Date/Initials): 06/21/01 ZK

Supervisor/Reviewed by (Date/Initials): 6/21/01 MY

QA/QC Review (Date/Initials): 6/26/01

File Name in G/ Drive: G:\NARRATIV\9162OBG.WC

Wet Chemistry

Holding Times

All samples were prepared and analyzed within the method and/or QAPP specified holding times.

Laboratory Control Sample

All spike recoveries met method and/or project specified QC criteria.

MS/MSD AND MS/MSD RPD

The following analyte did not meet matrix spike/matrix spike duplicate percent recovery criteria:

Sample Description	Sample #	Analyte	% REC	RPD	Corrective Action
MW-7	S6752	Total cyanide	X		1

1. The concentration of the analyte in the sample was much greater than the concentration of the spike added. No further corrective action was taken.

Sample Duplicate

All sample duplicate RPD data met method and/or project specific QC criteria.

Calibrations

All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

STORM WATER SAMPLES

ANALYTICAL PACKAGE

for

O'Brien & Gere Engineers, Inc.
Honeywell - Tonawanda Coke
Tonawanda, NY
Water Samples

Water samples collected: December 11, 2001

Volume 1 of 3

Prepared for: O'Brien & Gere Engineers, Inc.
5000 Brittonfield Parkway
P.O. Box 4873
Syracuse, NY 13221

Prepared by: O'Brien & Gere Laboratories, Inc.
5000 Brittonfield Parkway
Suite 300, P.O. Box 4942
Syracuse, NY 13221

Authorized _____

Date 1.18.02

Reviewed Joseph C. Hamm

Date 1/18/02

TABLE OF CONTENTS

Sample Data Summary Package

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		VOA GC/MS Method #	BNA GC/MS Method #	VOA GC Method #	Pest PCBs Method #	Metals	Other
Inlet A	T6812	95-1	95-2			200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
Inlet B	T6813	95-1	95-2			200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
Inlet B	T6813MS	95-1	95-2			200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
Inlet B	T6813MSD	95-1	95-2				
Inlet B	T6813D					200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
Outfall 2	T6814	95-1	95-2			200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
Outfall 1	T6815	95-1	95-2			200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
X-1	T6816	95-1	95-2			200.7 CLP-M* & 245.1 CLP-M*	335.2 CLP-M*
Storage Blank	T6817	95-1					
QC Trip Blank	T6818	95-1					

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE(VOA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D at LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
T6812	Water	12/11/01	12/12/01	Low	12/13/01
T6813	Water	12/11/01	12/12/01	Low	12/13/01
T6813MS	Water	12/11/01	12/12/01	Low	12/13/01
T6813MSD	Water	12/11/01	12/12/01	Low	12/13/01
T6814	Water	12/11/01	12/12/01	Low	12/13/01
T6815	Water	12/11/01	12/12/01	Low	12/13/01
T6816	Water	12/11/01	12/12/01	Low	12/13/01
T6817	Water	12/12/01	12/12/01	Low	12/13/01
T6818	Water	12/11/01	12/12/01	Low	12/14/01

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE(BNA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D at LAB	DATE EXTRACTED	DATE ANALYZED
T6812	Water	12/11/01	12/12/01	12/13/01	12/15/01
T6813	Water	12/11/01	12/12/01	12/13/01	12/15/01
T6813MS	Water	12/11/01	12/12/01	12/13/01	12/15/01
T6813MSD	Water	12/11/01	12/12/01	12/13/01	12/15/01
T6814	Water	12/11/01	12/12/01	12/13/01	12/19/01
T6815	Water	12/11/01	12/12/01	12/13/01	12/15/01
T6816	Water	12/11/01	12/12/01	12/13/01	12/15/01

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE(BNA) ANALYSES

LABORATORY SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEANUP	DIL/CONC FACTOR
T6812	Water	95-2	Cont.	None	1X
T6813	Water	95-2	Cont.	None	1X
T6813MS	Water	95-2	Cont.	None	1X
T6813MSD	Water	95-2	Cont.	None	1X
T6814	Water	95-2	Cont.	None	1X
T6815	Water	95-2	Cont.	None	1X
T6816	Water	95-2	Cont.	None	1X

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSIS

Laboratory Sample ID	Matrix	Metals Requested	Date Rec'd at Lab	Date Analyzed
T6812	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02
T6813	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02
T6813D	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02
T6813MS	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02
T6814	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02
T6815	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02
T6816	WATER	CLP	12/12/01	12/15/01 & 01/02,13/02

G:\METALS\DECFORMS\7250BGEcoke.dec.wpd

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from Honeywell, Tonawanda Coke located in Tonawanda, NY. New York State Department of Environmental Conservation forms are included in the Sample Data Summary Package and in the Sample Data Package.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage, custody inconsistencies and proper preservation. Chain of custodies documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

No discrepancies were noted upon receipt. Cooler temperatures were 3 °C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	95-1	1
Semivolatile Organics	95-2	1
ICP Metals	200.7 CLP-M*	1
Mercury	245.1 CLP-M*	1
Cyanide	335.2 CLP-M*	1

1) New York State Department of Environmental Conservation Analytical Services Protocol, October 1995.

QUALITY CONTROL

QA/QC results are summarized in the Sample Data Summary Package and are also included in the raw data.

RAW DATA

The raw data is organized in the New York State Department of Environmental Conservation Analytical Services Protocol Superfund order of data requirements.

GC/MS Volatile Organics Case Narrative

Client:	O' Brien & Gere Engineers, Inc.
Job Number:	3435.044.76391
Package #:	725
Methodology:	ASP 95-1

Analyzed/Reviewed by (Date/Initials): SG 12-31-01

Supervisor/Reviewed by (Date/Initials): @ 1-4-02

QA/QC Review (Date/Initials): 1/6/02

GC/MS Volatile Organics

The GC/MS Volatile instruments used a Restek Rtx-502.2, 60 m x 0.25 mm ID capillary column and a Vocarb 3000 trap.

There were no excursions to note. All QC results were within established control limits.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Samples had a pH of less than 2.

Laboratory Control Sample

All spike recoveries met method and/or project specific QC criteria.

MS/MSD/MSB

All spike recovery and RPD data met method and/or project specific QC criteria.

Surrogate Standards

All surrogate recoveries met method and/or project specific QC criteria.

Internal Standards

All internal standard areas met method and/or project specific QC criteria.

Calibrations

All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

GC/MS Semivolatile Organics Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.044.76391
Package #:	725
Methodology:	95-2

Analyzed/Reviewed by (Date/Initials): ASK 1-8-02

Supervisor/Reviewed by (Date/Initials): (AW) 1-8-02

QA/QC Review (Date/Initials): 1/9/02

File Name in G/ Drive: C:\My Documents\725sv.nar.doc

GC/MS Semivolatile Organics

The GC/MS Semivolatile instruments used a J&W DB-5MS, 30 m X 0.25 mm ID capillary column.

Holding Times

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample

The following compound(s) did not meet laboratory control sample recovery criteria:

LCS No.	Compound	Corrective Action
L121301W2	4-Nitroaniline	1
	3,3'-Dichlorobenzidine	1

1. The LCS was reanalyzed and still did not meet criteria. Both sets of data are included. The analyte was not detected in associated samples. No further corrective action was taken.

MS/MSD/MSB

The following compound(s) did not meet matrix spike/matrix spike duplicate/matrix spike blank percent recovery and/or RPD criteria:

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
MSB01	PS121301W2	4-Nitrophenol	X		1
Inlet B	T6813	4-Nitrophenol	X		1
		Pentachlorophenol	X		1
		2,4-Dinitrotoluene	X		1

1. The associate LCS met acceptance criteria. No corrective action was taken.

Client: O'Brien & Gere Engineers, Inc.
Job Number: 3435.044.76391
Package #: 725
Methodology: 95-2

Surrogates
All surrogate recoveries met method and/or project specific QC criteria.

Internal Standard Areas
All internal standard areas met method and/or project specific QC criteria.

Calibrations
The following continuing calibration compound(s) exceeded method percent drift and/or RRF criteria:

Calibration Date	Instrument	Compound	%D	RRF	Corrective Action
12/15/01	MS#5	2-Methylphenol	X		1
12/19/01	MS#5	2-Methylphenol	X		1
		N-Nitrosodi-n-propylamine	X		1
		2-Fluorophenol	X		1

1. The method allows four compounds to fail as long as their percent difference is less than 40%. No corrective action was taken.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Trace Metals Case Narrative

Client:	O'Brien & Gere Engineers, Inc.
Job Number:	3435.044.76391
Package #:	725
Methodology:	ICP metals - 200.7 CLP-M* Mercury - 245.1 CLP-M* Total cyanide - 335.2 CLP-M*
Analyzed/Reviewed by (Date/Initials):	1-15-02 mt
Supervisor/Reviewed by (Date/Initials):	1-15-02 mt
QA/QC Review (Date/Initials):	1/17/02
File Name in G/ Drive:	G:\NARRATIV\725OBGEcoke.clp.wpd

Trace Metals

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

Matrix Spike
All spike recovery and RPD data met method and/or project specific QC criteria.

Sample Duplicate
All sample duplicate RPD data met method and/or project specific QC criteria.

ICP Serial Dilution
The following analyte did not meet ICP serial dilution recovery criteria:

Sample Description	Sample #	Analyte	Corrective Action
Inlet B	T6813	Potassium	1

1. Form I's were flagged with an "E" accordingly.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Appendix B

Test Boring Logs

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-9
Client: Honeywell	Sampler: 2-inch Split Spoon	Page 1 of
Proj. Loc: Tonawanda, NY	Hammer: 140-lb	Location:
File No.: 1163/26080	Fall: 30-inch	Start Date: 5/24/01 End Date: 5/24/01
Boring Company: SJB Services Foreman: Matt Mattehis OBG Geologist: DJ Carnevale		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	UV
0		2	5-17	2/1.5	22	Olive black (5Y 4/1), damp, slaggy FILL to ~1 ft, to dark reddish brown (10R 3/4) damp, SILT, little clay to 2 ft	FILL		2.5	
			5-4							
2		4	6-5	2/1	12	Dark reddish brown (10R 3/4), damp, SILT, little clay, some black sand and slaggy fill, trace brick fragments to 4 ft			2	
			7-4							
4		6	4-4	2/2	7	Black (N1), saturated, silty SLAG, little clay		=	1.6	
			3-3					=		
6		8	5-3	2/1	13	As above with some pale yellow tile-like fragments		=	3	
			10-9					=		
8		10	2-2	2/2	5	Medium dark gray (N4), with black mottles, moist, silty CLAY, some heavy slag fragments to ~9.5 ft, to medium bluish gray (5B 5/1), silty CLAY to 10 ft		=	6.5	
			3-4					=		
10		12	5-4	2/2	9	Medium bluish gray as above to ~11 ft, to dusky yellowish brown (10YR 2/2), with olive black mottles, damp, silty CLAY, some root matter			3.7	
			5-5							

Well construction: 2-in PVC 0.010-in slot screen from 5 ft to 10 ft; sandpack from 4 ft to 10 ft; bentonite seal from 1 ft to 4 ft
Cement well pad around protective casing from grade to 1 ft

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-10
Client: Honeywell	Sampler: 2-inch Split Spoon	Page 1 of
Proj. Loc: Tonawanda, NY	Hammer: 140-lb	Location:
File No.: 1163/26080	Fall: 30-inch	Start Date: 5/24/01 End Date: 5/24/01
Boring Company: SJB Services Foreman: Matt Mattehis OBG Geologist: DJ Carnevale		Screen = Riser ; \ Grout, Sand Pack, Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	UV
0		2	7-7	2/2	12	Olive black (5Y 4/1), damp, slaggy FILL to ~0.5 ft, to dark reddish brown (10R 3/4), damp, SILT, little clay to 1.5 ft, to black slaggy Silt	FILL		11.2	
			5-4							
2		4	6-3	2/2	9	Black (N1), moist, slaggy SILT, little gravel, chemical odor			41.7	
			6-7							
4		6	1-1	2/2	2	Black (N1), saturated, slaggy SILT, little gravel, chemical odor			25.4	
			1-1							
6		8	2-3	2/0	5	No recovery			---	
			2-2							
8		10	woh-1	2/2	2	Black (N1), saturated, slaggy SILT, little gravel to ~9.5 ft, to dark yellowish brown (10YR 4/2), moist, SILT, trace clay, root material to 10 ft			6.9	
			1-1							
10		12	2-1	2/2	4	Brownish gray (5YR 4/1), moist, silty CLAY to 12 ft			3.0	
			3-3							

Well construction: 2-in PVC 0.010-in slot screen from 5 ft to 10 ft; sandpack from 4 ft to 10 ft; bentonite seal from 1 ft to 4 ft
Cement well pad around protective casing from grade to 1 ft

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-11
Client: Honeywell Proj. Loc: Tonawanda, NY File No.: 1163/26080	Sampler: 2-inch Split Spoon Hammer: 140-lb Fall: 30-inch	Page 1 of Location: Start Date: 5/24/01 End Date: 5/24/01
Boring Company: SJB Services Foreman: Matt Mattehis OBG Geologist: DJ Carnevale		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	UV
0		2	4-8	2/2	18	Topsoil to 0.5 ft, to black fine sandy SILT fill to ~1.5 ft, to moderate reddish brown (10R 4/6), damp SILT, trace clay to 2 ft			2.6	
			10-4							
2		4	6-6	2/2	13	Moderate reddish brown (10R 4/6), damp SILT to 4 ft			3.4	
			7-5							
4		6	1-2	2/2	5	Brownish black (5YR 2/1), moist, SILT, little clay to 6 ft			3.8	
			3-2							
6		8	5-5	2/2	15	Moderate reddish brown (10R 4/6), damp SILT, little clay to 8 ft			3.6	
			10-12							
8		10	6-11	2/2	28	Moderate reddish brown (10R 4/6), damp SILT, little clay to 10 ft			1.4	
			17-19							

Well construction: 2-in PVC 0.010-in slot screen from 3 ft to 8 ft; sandpack from 2.5 ft to 8 ft; bentonite seal from 1.5 ft to 2.5 ft
Cement well pad around protective casing from grade to 1.5 ft

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-12
Client: Honeywell	Sampler: 2-inch Split Spoon	Page 1 of
Proj. Loc: Tonawanda, NY	Hammer: 140-lb	Location:
File No.: 1163/26080	Fall: 30-inch	Start Date: 5/24/01 End Date: 5/24/01
Boring Company: SJB Services Foreman: Matt Mattehis OBG Geologist: DJ Carnevale		Screen / Riser Grout / Sand Pack / Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Field Testing UV
0		2	2-3	2/2	5	Brownish Gray (5YR 4/1), damp, SILT, some gravel fill			14.4	
			2-2							
2		4	4-6	2/2	10	Moderate reddish brown (10R 4/6), damp SILT, some gravel fill			8.3	
			4-4							
4		6	2-1	2/2	4	Black (N1), moist, gravelly FILL to ~5 ft, to moist, medium gray (N5), clayey SILT to 6 ft			11.4	
			3-3							
6		8	2-3	2/2	8	Medium gray (N5), moist, clayey SILT to ~7.5 ft, moderate reddish brown (10R 4/6), damp SILT, little clay to 8 ft			5.4	
			5-5							
8		10	2-5	2/2	14	Moderate reddish brown (10R 4/6), moist SILT, little clay to 10 ft			8.2	
			9-12							

Well construction: 2-in PVC 0.010-in slot screen from 4.5 ft to 9.5 ft; sandpack from 2.5 ft to 9.5 ft; bentonite seal from 1.5 ft to 2.5 ft
Cement well pad around protective casing from grade to 1.5 ft

Appendix C

Ground Water Sampling Field Logs

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/5/01	Personnel	T. Prawel	Weather	Sunny 65°+/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-1
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.6	ft.
Depth to Water *	6.26	ft.
Length of Water Column	5.34	ft.

* 4" ø Well

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column

1510 Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute

Collect readings at every ~~three~~ 5 minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
5	6.90	12.97	4.63	3.04	52	0.53	9.89	250 slow
10	6.96	13.16	4.54	3.01	38	0.24	8.78	210
15	7.00	13.16	4.59	2.99	13	.10	4.33	210 slow
20	7.00	12.74	4.71	3.02	-13	0.0	4.22	200
25	7.00	12.40	4.89	3.05	-39	0.0	3.34	180
30	7.01	12.31	5.00	3.10	-52	0.0	11.2	200
35	7.00	12.36	5.05	3.10	-56	0.0	17.6	180
40	6.99	12.45	5.10	3.07	-62	0.0	18.5	180
45	6.99	12.70	5.10	3.01	-67	0.0	18.3	180
50	6.99	12.92	5.07	2.95	-71	0.0	16.1	180
55	6.99	12.89	5.03	2.91	-72	0.0	15.7	180

Water sample:

Time collected: 1612

Total volume of purged water removed: 3½+/-

Physical appearance at start		Physical appearance at sampling	
Color	Milky White	Color	Clear
Odor	Slight	Odor	Strong solvent
Sheen/Free Product	None	Sheen/Free Product	none

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: Collected Blind Dup. X-1

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/7/01	Personnel	T. Prawel	Weather	Sunny 75°+/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-2
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.8	ft.	* Measurements taken from
Depth to Water *	5.60	ft.	X Top of Well Casing
Length of Water Column	6.2	ft.	Top of Protective Casing
			(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
1630	5.67							
5	6.46	12.80	7.01	312	-156	1.80	1.80	420
10	6.81	12.62	7.10	309	-161	0.48	1.07	300
15	7.06	12.58	7.13	307	-155	0.05	1.01	260
20	7.30	12.78	7.14	3.05	-162	0.00	0.66	230
25	7.47	12.93	7.16	3.03	-161	0.00	0.95	170
30	7.67	12.89	7.17	3.02	-167	0.00	0.83	170
35	7.84	12.85	7.16	3.00	-183	0.00	0.67	150
40	7.94	12.96	7.18	2.94	-178	0.00	1.19	130
45	8.07	13.05	7.19	2.88	-168	0.00	1.11	130
50	8.17	13.36	7.18	2.83	-153	0.00	1.26	150
55	8.39	13.46	7.18	2.78	-144	0.00	1.57	150
60	8.58	13.57	7.20	2.79	-133	0.00	1.12	150
	Can't get pump slower will turn up and pump down							
65	8.81	13.51	7.22	2.79	-125	0.00	1.16	250
70	9.02	13.28	7.22	2.79	-124	0.00	1.03	250
75	9.17	13.13	7.23	2.79	-119	0.00	0.96	250
80	9.35	12.92	7.23	2.81	-115	0.00	0.91	300
85	9.56	12.54	7.22	2.84	-113	0.00	0.98	300
90	9.81	12.24	7.21	2.88	-114	0.00	0.63	300

Water sample: 10.21 Dry ↑sunshine
Time collected: 1045 *
Total volume of purged water removed: 7

Physical appearance at start — 6/9/01 · WL 10.85 @ 1013

Color	clear
Odor	Slight solvent
Sheen/Free Product	None

0.36 x 1.653 = .24 gal.

Physical appearance at sampling

Color	Clear w/ Ants
Odor	Slight
Sheen/Free Product	None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

1097
1255

* Sampled 6/9/01

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/8/01	Personnel	T. Prawel	Weather	Sunny 75° +/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-3
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.60	ft.
Depth to Water *	5.94	ft.
Length of Water Column	5.66	ft.

* Measurements taken from

	Top of Well Casing
X	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
1315	6.10 = 6.50 TOC							
5	6.92	1390	7.25	1.80	-141	6.67	4.20	320
10	7.18	1409	7.27	1.69	-144	9.16	2.22	230
15	7.32	1407	7.29	1.65	-142	7.17	2.31	150
20	7.46	1420	7.30	1.57	-139	6.12	2.07	140
25	7.60	1447	7.30	1.54	-136	1.33	2.70	140
30	7.75	1445	7.31	1.50	-133	1.29	2.10	140
35	7.90	1445	7.32	1.47	-131	0.98	2.89	140
40	8.04	1466	7.33	1.44	-128	0.73	2.42	140
45	8.15	1472	7.33	1.42	-126	0.67	2.53	140
50	8.43 will not go static	1446	turn up 7.35	F.R. and pump down 1.38	-124	0.62	2.89	300
55	8.69	1405	7.38	1.26	-118	0.52	2.67	300
60	8.97	1390	7.38	1.21	-110	0.42	1.54	340
65	9.23	1380	7.35	1.23	-110	0.21	1.47	340
70	9.58	1363	7.34	1.28	-113	0.00	1.26	380
75	9.95	1343	7.32	1.37	-116	0.00	1.08	400
80	10.30	1320	7.31	1.47	-119	0.00	1.29	400
85	10.72	1312	7.31	1.53	-121	0.00	1.09	400
90	11.15 Dry = 11.55 TOC							

Water sample: 6/9/01 WL 10.30 @ 1010
Time collected: 1140 *
Total volume of purged water removed: 6

Physical appearance at start
Color: Clear w/ Black Part.'s
Odor: Slight Solvent
Sheen/Free Product: None

= 1.25' x .653 = .816 gal.

Physical appearance at sampling
Color: _____
Odor: _____
Sheen/Free Product: _____

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

* Sampled 6/9/01

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/8/01	Personnel	T. Prawel	Weather	Sunny 70's°
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-4
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.9	ft.
Depth to Water *	5.82	ft.
Length of Water Column	6.08	ft.

* Measurements taken from

	Top of Well Casing
X	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
1115	5.82 WL = 6.12 TOC							
5	6.61	1450	7.12	1.79	70	0.82	1.81	380
10	6.77	1432	7.26	1.71	32	0.22	0.98	240
15	6.88	1472	7.27	1.68	-4	0.09	0.71	180
20	6.99	1474	7.29	1.65	-18	0.15	0.54	180
25	7.09	1488	7.30	1.62	-30	0.25	0.69	140
30	7.18	1507	7.32	1.60	-41	0.41	1.15	140
35	7.33	1522	7.34	1.57	-46	0.60	0.60	130
40	7.44	1516	7.36	1.55	-45	1.00	0.79	140
45	7.55	1494	7.28	1.63	-39	1.07	0.90	130
50	7.65	1520	7.30	1.58	-38	1.40	0.60	140
55	7.79	1507	7.33	1.56	-37	1.73	0.91	150
60	7.90	1531	7.37	1.51	-37	2.37	1.34	130
65	8.00	1534	7.40	1.49	-36	2.76	0.94	120
70	8.10	1530	7.40	1.49	-36	2.90	1.18	120
75	8.19	1526	7.38	1.48	-40	2.74	1.24	120
80	8.27	1529	7.34	1.48	-48	2.49	1.21	120
85	8.35	1537	7.33	1.48	-52	2.29	1.47	120
90	Turn up Flow Rate 8.55	1498	will not go below 7.30	go Static 1.49	-57	1.86	1.03	400
95	8.69							

Water sample: DM @ 1255
Time collected: 1015 * 6/9/01 - WL 5.85 @ 1012
Physical appearance at start
Color: Clear
Odor: None
Sheen/Free Product: None

<6.7' x .653 = 4.37 gal.

Total volume of purged water removed: 4.5 gal's

Physical appearance at sampling
Color: Clear
Odor: Slight
Sheen/Free Product: None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: WL 7.85 @ 1500

* Sampled 6/9/01

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/5/01	Personnel	TPP	Weather	Sunny 65°+/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-5
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.1	ft.
Depth to Water *	6.67	ft.
Length of Water Column	4.43	ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

1035

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	685 = 7.42 TOC	15.79	6.13	382	-44	7.48	41.2	310 slow
5	850	13.53	6.97	2.53	-122	7.91	3.45	210 slow
10	891	12.91	7.06	2.35	-121	8.16	13.2	180
15	922	12.85	7.09	2.32	-108	3.24	36.8	190 slow
20	940	11.83	7.10	2.30	-103	1.16	16.68	165
25	1011	11.96	7.10	2.28	-99	0.31	1.21	135
30	1046	11.90	7.10	2.29	-92	0.15	2.63	110
35	1085	11.94	7.09	2.27	-96	0.24	2.33	100
	1047 = 11.00							
1135	Dry @	2.5 gal's +/-						
	Per T. Alexander							
		2 VOA's						
		2 - ½ full Liters Glass						
		½ full Metals						
		½ full CN						
	Sampled	1600 6/7/01						

Water sample:

Time collected: 1600 6/7/01

Physical appearance at start
- Color: Clear
- Odor: Slight Solvent
- Sheen/Free Product: None

Total volume of purged water removed: _____

Physical appearance at sampling
- Color: _____
- Odor: _____
- Sheen/Free Product: _____

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: 6/5 1650 WL 9.91 BMP
BBS @ 1330 = 0.35 gal
6/6 1300 WL 9.36 BMP

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/6/01	Personnel	T. Prawel	Weather	overcast/sunny 65°
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-6
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.4	ft.
Depth to Water *	5.55	ft.
Length of Water Column	5.85	ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
1010	5.65							
5	5.70	12.72	3.73	2.65	255	7.60	11.5	320
10	5.70	12.09	4.23	2.56	163	6.88	3.11	320
15	5.70	12.07	4.32	2.56	135	6.36	1.32	330
20	5.70	12.01	4.36	2.58	116	5.97	0.78	330
25	5.70	12.00	4.38	2.59	107	4.95	0.56	320
30	5.70	11.99	4.39	2.61	98	4.15	0.68	320
35	5.70	11.98	4.40	2.61	93	3.89	0.50	320
40	5.70	12.00	4.41	2.61	88	3.68	0.57	320
45	5.71	11.99	4.42	2.61	85	3.37	0.39	350
50	5.71	11.96	4.42	2.61	81	3.17	0.18	350
55	5.71	11.95	4.42	2.60	78	2.93	0.19	350
1060	5.71	11.93	4.42	2.60	74	2.80	0.17	330
65	5.71	11.87	4.43	2.60	72	2.36	0.50	330
70	5.71	11.83	4.43	2.60	68	1.91	0.14	330
75	5.71	11.75	4.44	2.63	70	0.0	0.13	330
80	5.71	11.77	4.45	2.64	69	0.0	0.16	330
85	5.71	11.89	4.46	2.63	70	0.0	0.20	330

Water sample:

Time collected: 1245

Total volume of purged water removed: 7

Physical appearance at start		Physical appearance at sampling	
Color	Clear	Color	Clear
Odor	Slight Solvent	Odor	Heavy Solvent
Sheen/Free Product	None	Sheen/Free Product	None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/6/01	Personnel	T. Prawel	Weather	Sunny 56° +/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-7
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.8	ft.
Depth to Water *	6.22	ft.
Length of Water Column	5.58	ft.

* Measurements taken from

	Top of Well Casing
X	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column

9⁰⁰ Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute

Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	6.28 = 6.61 TOC							~~450~~
5	6.61	13.84	2.24	5.54	388	.50	1.33	450
10	6.61	13.56	2.20	5.68	386	4.72	0.88	420
15	6.61	13.53	2.25	5.71	382	5.50	0.90	410
20	6.61	1356	2.26	5.66	381	6.05	0.71	410
25	6.61	1345	2.27	5.63	380	6.50	0.87	410
30	6.61	13.37	2.27	5.61	379	5.72	0.98	400
35	6.61	1340	2.28	5.58	378	5.12	0.66	400
40	6.61	1327	2.28	5.56	377	4.20	0.46	400
45	6.61	1323	2.27	5.52	376	0.23	0.42	400
50	6.61	1322	2.25	5.51	375	0.0	0.58	400
55	6.61	13.33	2.26	5.49	375	0.0	0.33	400
60	6.61	13.30	2.28	5.49	376	0.0	0.45	400

Water sample:

Time collected: 10⁰⁵

Total volume of purged water removed: 7

Physical appearance at start		Physical appearance at sampling	
Color	Clear	Color	Clear
Odor	None	Odor	Slight Solvent
Sheen/Free Product	None	Sheen/Free Product	None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/5/01	Personnel	TPP	Weather	Sunny 65° +/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-8
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	15.12	ft.
Depth to Water *	3.81	ft.
Length of Water Column	11.39	ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column

13[00] Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute

Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	4.91	14.85	7.08	2.21	-93	0.93	3.99	230
5	5.20	11.57	7.33	2.15	-76	1.37	2.20	200
10	6.61	11.26	7.38	2.10	-55	1.41	1.52	200
15	7.76	11.20	7.38	2.08	-37	1.35	1.62	190
20	8.92	11.21	7.39	2.08	-25	1.26	1.57	190
25	10.21	11.11	7.37	2.06	-17	1.10	0.99	200
30	10.51	11.00	7.37	2.06	-10	1.07	2.05	200
35	10.87	11.02	7.40	2.05	-3	1.33	1.09	200 slow
40	11.17	11.02	7.38	2.03	3	1.36	1.18	170
45	11.45	11.06	7.39	2.03	8	0.98	0.68	170
50	11.72	11.04	7.46	2.03	11	1.01	0.68	170
55	12.02	10.96	7.49	2.03	14	1.00	0.45	170
60	12.28	10.95	7.51	2.03	17	1.00	0.62	170 slow
65	12.49	11.13	7.53	2.04	20	1.00	1.01	140
70	12.72	11.14	7.40	2.04	23	1.19	0.68	140
~~RWO Started Pump~~								
75	12.74	10.50	7.47	2.07	29	1.21	0.62	140
80	12.75	10.51	7.47	2.07	29	1.21	0.62	140

Water sample:

Time collected: 14[20]

Total volume of purged water removed: 4

Physical appearance at start		Physical appearance at sampling	
Color	Clear	Color	Clear
Odor	None	Odor	Slight
Sheen/Free Product	None	Sheen/Free Product	None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/6/01	Personnel	T. Prawel	Weather	overcast 68°F
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-9
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	12.90	ft.	* Measurements taken from
Depth to Water *	6.70	ft.	X Top of Well Casing
Length of Water Column	6.20	ft.	Top of Protective Casing
			(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
1307	6.77							
5	7.30	1298	6.99	2.02	-6	7.39	6.21	390
10	7.25	1296	7.07	2.01	-36	7.23	2.48	330
15	7.26	12.90	7.12	1.93	-58	6.76	1.75	330
20	7.27	13.00	7.16	1.86	-74	5.88	1.14	330
25	7.28	13.01	7.19	1.82	-86	5.52	0.98	330
30	7.28	13.00	7.21	1.79	-94	5.26	0.73	320
35	7.29	13.00	7.24	1.77	-103	4.95	0.60	330
40	7.24	1306	7.25	1.73	-108	4.67	0.55	300
45	7.25	1314	7.26	1.74	-110	0.54	0.54	300
50	7.25	1301	7.27	1.72	-114	0.0	0.52	300
55	7.25	1309	7.28	1.71	-117	0.00	0.57	300
60	7.25	13.18	7.29	1.69	-119	0.0	0.52	300

Water sample:

Time collected: 1415

Total volume of purged water removed: 5

Physical appearance at start		Physical appearance at sampling	
Color	Clear	Color	clear
Odor	Slight Solvent	Odor	Solvent
Sheen/Free Product	None	Sheen/Free Product	None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/5/01	Personnel	TPP	Weather	overcast 62°+/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow cell	Well #	MW-10
Site Location	Tonawanda NY	Sampling Method	Low flow	Project #	26080

Well information:

Depth of Well *	12.6	ft.
Depth to Water *	7.74	ft.
Length of Water Column	4.86	ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every ~~three~~ 5 minute intervals

10^06

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	7.80	12.84	5.81	4.24	8	3.86	7.78	400
5	7.97	12.46	5.86	4.16	-12	.48	10.21	330
10	8.00	12.14	5.89	4.17	~~-23~~ -26	0.14	9.70	330
15	8.02	11.93	5.86	4.28	-31	0.32	9.05	330
20	8.05	11.94	5.84	4.33	-33	0.16	8.85	400
25	8.06	12.02	5.83	4.38	-32	0.0	8.35	330
30	8.06	11.98	5.82	4.43	-32	0.0	6.52	330
35	8.06	11.95	5.82	4.47	-32	0.0	6.02	330
40	8.06	12.04	5.81	4.47	-33	0.0	5.46	330

Water sample:

Time collected: 1045

Total volume of purged water removed: 5gal

Physical appearance at start

Color	Clear
Odor	None
Sheen/Free Product	None

Physical appearance at sampling

Color	Clear
Odor	none
Sheen/Free Product	none

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/6/01	Personnel	T. Prawel	Weather	overcast + 68°+/-
Site Name	Tonawanda Coke	Evacuation Method	Low Flow	Well #	MW-11
Site Location	Tonawanda NY	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	11.40	ft.	* Measurements taken from
Depth to Water *	5.94	ft.	X Top of Well Casing
Length of Water Column	5.46	ft.	Top of Protective Casing
			(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
1440	5.92							
5	7.09	1324	7.52	1.81	14	0.51	3.65	290
10	7.45	1346	7.52	1.79	-4	0.41	2.68	210
15	7.76	1339	7.49	1.79	-16	0.04	2.18	180
20	8.23	1344	7.46	1.81	-32	0.02	2.80	150
25	8.70	1349	7.45	1.80	-42	0.00	5.47	150
30	9.15	1341	7.46	1.80	-50	0.00	16.4	150
35	9.50	1306	7.48	1.81	-46	0.00	15.5	150
40	9.76	1275	7.41	1.79	-25	0.50	7.69	150
45								
50								
1423	Dry @	9.86 BMP		w/ 2 gal +/- Purge				
1410	6/7/01	Sampled	Recharge					

Water sample:

Time collected: 1410

Total volume of purged water removed: 2

Physical appearance at start		Physical appearance at sampling	
Color	clear	Color	clear
Odor	slight	Odor	slight
Sheen/Free Product	none	Sheen/Free Product	none

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: WL. 6.15 - 6/7/01 @ 1339

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	6/8/01	Personnel	T. Prawel	Weather	Sunny 75°+/-
Site Name	Tonawanda	Evacuation Method	Low Flow	Well #	MW-12
Site Location	Coke	Sampling Method	Low Flow	Project #	26080

Well information:

Depth of Well *	12.20	ft.	* Measurements taken from
Depth to Water *	12.00	ft.	X — Top of Well Casing
Length of Water Column	0.20	ft.	Top of Protective Casing
			(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
	No Water in well to sample							

Water sample:

Time collected: —

Total volume of purged water removed: ϕ

Physical appearance at start		Physical appearance at sampling	
Color		Color	
Odor		Odor	
Sheen/Free Product		Sheen/Free Product	

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

O'Brien & Gere Laboratories, Inc.

5000 Brittonfield Parkway
East Syracuse, New York 13057
(315) 437-0200

Chain of Custody

Client: Allied / Honeywell # 26080
Project: Tonawanda Coke
Sampled by: T. Prawel
Client Contact: Phone #

Sample Description

Sample Location	Date Collected	Time Collected	Sample Matrix	Comp. or Grab	No. of Containers	Analysis/Method: 95-1 VOA's	95-2 SVOA's	95-3 Metals	CN				Comments
MW-2	6/9/01	1045	Water	Grab	7	3	1	1	1	1			
MW-4	6/9/01	1115	Water	Grab	8	3	2	1	1	1			
MW-3	6/9/01	1140	Water	Grab	8	3	2	1	1	1			
Trip Blank	6/8/01				1	1							

Relinquished by: [signature]	Date: 6/9/01	Time: 1300	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by Lab:	Date:	Time:
Shipment Method: FED Ex			Airbill Number: 8271-1284-1739		

Turnaround Time Required:
Routine_____
Rush (Specify)_____

Comments:

Cooler Temperature:_____

Original Laboratory Copy Client

O'Brien & Gere Laboratories, Inc.

5000 Brittonfield Parkway
East Syracuse, New York 13057
(315) 437-0200

Chain of Custody

Client: Allied / Honeywell
Project: Tonawanda Coke
Sampled by: T. Prawel
Client Contact: Phone #

Sample Description

Sample Location	Date Collected	Time Collected	Sample Matrix	Comp. or Grab	No. of Containers	Analysis/Method: VOC's 95-1	SVOCs 95-2	95-3 Metals	CN				Comments
MW-11	6/7/01	1410	Water	Grab	8	3	2	1	1	1			
MW-5	6/7/01	1100	Water	Grab	6	2	1	1	1	1			
Trip Blank	6/7/01				1	1							

Relinquished by: [signature] Date: 6/8/01 Time: 1700
Relinquished by: Date: Time:
Relinquished by: Date: Time:
Shipment Method: Fed Ex

Received by: Date: Time:
Received by: Date: Time:
Received by Lab: Date: Time:
Airbill Number: 8271 1284 1740

Turnaround Time Required:
Routine_____
Rush (Specify)_____

Comments:

Cooler Temperature:_____

Original Laboratory Copy Client

O'Brien & Gere Laboratories, Inc.

5000 Brittonfield Parkway
East Syracuse, New York 13057
(315) 437-0200

Chain of Custody

Client: Allied / Honeywell
Project: Tonawanda Coke
Sampled by: T. Prawel
Client Contact: Phone #

Sample Description

Sample Location	Date Collected	Time Collected	Sample Matrix	Comp. or Grab	No. of Containers	Analysis/Method: VOC's 95-1	SVOC 95-2	95-3	Metals	CN			Comments
mw-10	6/5/01	1045	Wat	Grab	8	3	2	1	1	1			
mw-8	6/5/01	1420	Wat	Grab	8	3	2	1	1	1			
mw-1	6/5/01	1612	Wat	Grab	8	3	2	1	1	1			
mw-7 MS/MSD	6/6/01	1005	water	Grab	24	9	6	3	3	3			
mw-6	6/6/01	1245	Water	Grab	8	3	2	1	1	1			
mw-9	6/6/01	1415	Water	Grab	8	3	2	1	1	1			
X-1	—	—	Wat	Grab	8	3	2	1	1	1			
Trip Blank	—	—	Water	—	2	2							

Relinquished by: Thomas Kyle Date: 6/6/01 Time: 1700
Relinquished by: Date: Time:
Relinquished by: Date: Time:

Received by: Date: Time:
Received by: Date: Time:
Received by Lab: Date: Time:

Shipment Method: Fed Ex
Airbill Number: 827111284 1680
827111284 1691
827111284 1706

Turnaround Time Required:
Routine
Rush (Specify)

Comments:

Cooler Temperature:

Original Laboratory Copy Client

Attachment 1

Ground Water Elevation Summary

Attachment 1

Former Allied Specialty Chemical Site
Tonawanda, New York

Ground Water Elevations

			9/27/91		12/5/91		3/5/92		6/5/92		5/12/99		6/5/01	
Well I.D.	Total Depth (ft bTOC)	Top of Casing Elevation (ft)	Depth to GW	GW Elevation	Depth to GW	GW Elevation	Depth to GW	GW Elevation	Depth to GW	GW Elevation	Depth to GW	GW Elevation	Depth to GW	GW Elevation
MW-1	11.6	585.39	8.20	577.19	6.49	578.90	6.88	578.51	7.00	578.39	6.59	578.80	6.26	579.13
MW-2	11.8	583.78	0.10	574.68	9.22	574.56	8.67	575.11	7.68	576.10	6.08	577.70	5.60	578.18
MW-3	11.6	582.51	8.12	574.39	6.96	575.55	5.77	576.74	6.48	576.03	6.20	576.31	5.94	576.57
MW-4	11.9	583.87	6.01	577.86	5.84	578.03	5.92	577.95	5.98	577.89	5.83	578.04	5.82	578.35
MW-5	11.1	586.47	8.54	577.93	6.10	580.37	6.53	579.94	6.76	579.71	6.83	579.64	6.67	579.80
MW-6	11.4	584.62	7.52	577.10	5.90	578.72	6.22	578.40	6.30	578.32	5.93	578.69	5.55	579.07
MW-7	11.8	585.24	8.22	577.02	6.57	578.67	6.88	578.36	6.97	578.27	6.60	578.64	6.22	579.02
MW-8	15.2	586.08	7.50	578.58	5.70	580.38	9.50	576.58	7.42	578.66	4.18	581.90	3.81	582.27
MW-9	12.9	585.13	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	6.70	578.43
MW-10	12.6	586.28	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	7.74	578.54
MW-11	11.4	584.80	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	5.94	578.86
MW-12	12.2	581.48	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	DRY	DRY

36-inch invert - Inlet A 574.36
36-inch invert - Outfall #1 570.89
48-inch invert - Outfall #2 571.26

NOTES: NI - Not Installed
Elevations recorded by ERM-Northeast during 1991 and 1992 and by O'Brien & Gere during 1999 and 2001