SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION

IRR Supply Centers, Inc.
Wurlitzer Park Site
Tonawanda, New York

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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) was retained by IRR Supply Centers, Inc. (IRR) to conduct a Supplemental Environmental Investigation (SEI) of the Wurlitzer Site in North Tonawanda, New York (Site). The Site location is shown on Figure 1.1.

Previous investigations at the Site have been conducted by the New York State Department of Environmental Conservation (NYSDEC). Phase I (January 1989) and Phase II (April 1992) Investigations were conducted by NYSDEC Contractors (New York State Site Number 932041). These investigations considered two areas of the Site separately as shown on Figure 1.2. Area A, also referred to as Operable Unit 1, encompasses the area currently owned by IRR Supply Centers, Inc. Area B, or Operable Unit 2, encompasses the wooded/undeveloped area south of the former facility buildings. Although the Phase I and Phase II Investigations identified no waste disposal within Operable Unit 1, the NYSDEC contractors identified potential environmental concerns based on waste management practices typically used by industry during the period Wurlitzer operated at the Site (1908 to 1974). The SEI is focused on addressing these concerns as they pertain to Operable Unit 1 only. Operable Unit 2 was not investigated as part of this study because it is not owned by IRR.

The SEI was conducted to address environmental issues raised by the NYSDEC during meetings with CRA (Mr. Kelly McIntosh) and NYSDEC (Messrs. Daniel King and John Hyden) on February 20, 1998 and August 26, 1998. The results of the SEI are presented in this report.

1.1 SCOPE OF WORK

The Scope of Work was developed and completed to address the concerns of the NYSDEC as described below.

Task 1 - Review of Existing Data:

All available existing data and information concerning the history of the Site was reviewed and evaluated in conjunction with the results of the SEI tasks described below.

Task 2 - Test Pit Excavation and Sampling:

Six test pits were excavated. The purpose of the test pit excavations is to characterize subsurface soil in on-Site areas near the railroad tracks and residential properties. The test pit excavations provided the following subsurface information:

i) a measurement of the depth of fill materials;

ii) visual characterization of fill materials and underlying native soil;

iii) groundwater depth measurement; and

iv) soil samples for photoionization detector (PID) screening and/or chemical analysis.

Task 3 - Investigation of Building Sumps:

On April 29, 1998, Mr. Kelly McIntosh (CRA), conducted a Site reconnaissance with Mr. Tom Austen of Wurlitzer Industrial Park, Inc. The purpose of the Site reconnaissance was to identify building sumps. Available plant drawings were also reviewed.

Two sumps were identified. One is located in the pump room located in the eastern portion of the former facility. The second sump was identified in IRR's Sales and Service Area located in the western portion of the building complex. Both sumps are small (approximately 3 feet square) and contain a small amount of accumulated sediment. Both sumps pump to the stormwater system.

The location of a former pit was identified in the former plating area. This pit has been filled with concrete for at least the last ten years and does not represent a potential source of stormwater contamination.

Water and sediment within the two identified sumps were sampled for Target Compound List (TCL) volatile organic compounds (VOCs) and Target Analyte List (TAL) metals.

Task 4 - Site-Wide Groundwater Sampling Program

The purpose of the groundwater sampling program conducted throughout the Site is to obtain data regarding the presence in groundwater of chemicals which could have been used or released at the Site. All existing wells on the property owned by IRR were sampled and analyzed for TCL VOCs, semi-volatile organic compounds (SVOCs), and

metals. Hydraulic head measurements were performed prior to groundwater sampling activities. The purpose of the hydraulic monitoring is to assess groundwater flow patterns beneath the Site.

1.2 REPORT ORGANIZATION

The SEI Report is organized as follows:

Section 1 - Introduction: States the basis, purpose, and organization of the report and presents the scope of work performed to complete the program objectives.

Section 2 - Site History: The known history of operations at the Site is briefly described.

Section 3 - Work Performed: Describes the sampling methodology and field investigation activities.

Section 4 - Methodology: Details the sample collection and analytical methodology utilized to perform the project tasks.

Section 5 - Results: Presents an evaluation of the hydraulic head and analytical results and compares the analytical data to the appropriate standards and cleanup goals.

Section 6 - Conclusions and Recommendations: Based on the evaluation of hydraulic head and analytical results, conclusions and recommendations are presented.

Section 7 - Certification

2.0 SITE HISTORY

The Site has been used for manufacturing since 1892. In 1908, the Wurlitzer Industries acquired the Site which was at that time owned by the Dekleist Musical Instrument Manufacturing company. Wurlitzer manufactured organs, jukeboxes, pianos, and player pianos at the Site until the plant was shut down in approximately 1974. The following activities were conducted by Wurlitzer:

i) woodworking, painting;

ii) metal working, plating;

iii) lumber storage and drying;

iv) assembly; and

v) boiler house.

According to a Company chronology apparently prepared by Wurlitzer, during World War I and World War II, the plant was used for "war production". The materials produced during this time were not identified. Between 1974 and 1977, Wurlitzer utilized the Site only as an engineering and research facility. The facility was closed in 1977.

The following businesses currently operate at the Site:

i) IRR Supply Centers, Inc. (plumbing supplies, sales, and service), and its affiliate, Wurlitzer Industrial Park (office/business complex development and management at the Site);

ii) Erie Engineering;

iii) Commercial Fabrics (manufacturing); and

iv) Applied Design Company, Inc.

In addition, approximately 40 smaller tenants currently lease office, commercial, or warehouse space at the Site.

3.0 WORK PERFORMED

This section describes the field work performed at the Site to complete the SEI. The field activities completed included sampling of the sump water and sediment, test pit excavations, hand auger soil sampling, hydraulic head monitoring, and groundwater sampling. The sampling locations are presented on Figure 3.1. The analytical methods utilized to analyze samples for chemical analysis are presented in Section 4.0.

3.1 SUMP SAMPLING

As discussed in Section 1.2, the preliminary SEI activities at the Site included a Site reconnaissance to identify building sumps. The Site reconnaissance was performed by Mr. Kelly McIntosh (CRA) and Mr. Tom Austin (Wurlitzer Industrial Park) on April 29, 1998. During the Site reconnaissance, available plant drawings were reviewed. Two sumps were identified. One is located in the pump room located in the eastern portion of the former facility. The second sump was identified in IRR's Sales and Service Area located in the western portion of the building complex. Both sumps pump to the stormwater system.

On February 3, 1999, the water and sediment within the two identified sumps shown on Figure 3.1 (designated as Sump 1 and Sump 2) were sampled for TCL VOCs and TAL metals. At each location the water samples were collected prior to sediment sample collection. Sample containers were collected by submerging the sample container in the water until the container was filled. The sample collection and analytical methods are described in Section 4.0.

3.2 TEST PIT EXCAVATIONS

On December 18, 1998, a total of six test pits (designated as TP-1 through TP-6) were excavated by SJB Services with a backhoe on IRR property in the vicinity of the railroad tracks and on-Site near residential areas as shown on Figure 3.1. The depths of the excavations ranged from 3.5 feet below grade at TP-2 to 5.5 feet below grade at TP-5. Each test pit was excavated through the fill (encountered at every location) to a depth below the native soil horizon. The depth of fill materials and underlying native soils were visually characterized and soil samples were collected for PID screening and/or chemical analysis. The completed test pits were approximately 3 feet wide by 10 feet in length. Upon completion the excavated soil was used to backfill the test pits. Test pit excavation logs are presented in Appendix A.

Soil samples from each distinct soil horizon (i.e., fill, native) were collected and screened with a PID for VOCs. Soil samples were selected for chemical analysis from the interval with the highest organic vapors or from the base of the fill material if no organic vapors were detected. A total of five soil samples for chemical analysis were selected from TP-1, 2, 4, and 5. A blind duplicate sample was collected at TP-5. Additional sample volume was also collected from TP-3 for matrix spike (MS) and matrix spike duplicate (MSD) sample analysis.

Soil samples collected from the test pits were submitted to the laboratory for TCL VOCs, TCL SVOCs, and TAL metals analyses. Soil samples were collected using a precleaned stainless steel spoon to collect soil from the side wall of the excavation using the sampling and analytical methods described in Section 4.0.

3.3 HAND AUGER SAMPLING

Several of the test pit soil samples were reported by the analytical laboratory to contain low (estimated concentrations below detection limits) concentrations of 2-butanone and acetone, both of which are common contaminants in analytical laboratories. To confirm the presence/absence of these chemicals, two hand auger samples were collected at the locations and depth intervals sampled at Test Pits 1 and 5. The locations were adjacent to, but not within, the former test pit excavations. The soil samples were sent to a different laboratory for analyses of TCL VOCs (see Section 4.0).

The hand auger soil sampling was performed on February 3, 1999. A precleaned hand auger was utilized to sample subsurface soils adjacent to test pits TP-1 and TP-5. The hand auger was advanced to 2.2 feet at TP-1 and 2.5 feet at TP-5. Soil samples were collected from a depth interval of 2 to 2.2 feet at TP-1 and 2 to 2.5 feet at TP-5 using precleaned sampling equipment. The samples were collected and submitted to the laboratory for TCL VOCs analyses using the sampling methods described in Section 4.0.

3.4 HYDRAULIC MONITORING

On February 2, 1999, prior to sampling the groundwater, water level measurements were collected from all Operable Unit 1 monitoring wells previously installed at the Site by NYSDEC. The monitoring well locations are shown on Figure 3.1. Water levels were measured to the nearest one-hundredth foot with an electric water level tape. Water level measurements for each monitoring well were referenced to the top of the

individual riser pipe. A measured distance from the top of the riser pipe to the water surface was subtracted from the riser pipe elevation to determine the water elevation in the well. The hydraulic monitoring results (i.e., measured water levels and calculated groundwater elevations) are summarized in Table 3.1.

The water level measurement instrument was cleaned between locations using the decontamination method described in Section 4.0.

3.5 GROUNDWATER SAMPLING

Groundwater samples were collected on February 2 and 3, 1999 from all existing wells (see Figure 3.1) on the property owned by IRR (Operable Unit 1). A total of nine groundwater samples, including a blind duplicate sample collected at GW-4, were collected from the following eight sample locations:

GW-1	GW-3	GW-6
GW-2	GW-4	GW-6S
GW-2S	GW-4S	

Prior to sampling, wells were purged of either a minimum of three well volumes or until dry if low yielding wells were encountered. Conductivity, pH, turbidity, and temperature were monitored during purging. A peristaltic pump or dedicated bottom loading bailer were used to purge the wells. The field purging data are summarized in Table 3.2.

With the exception of GW-1, groundwater samples were collected with bottom loading teflon bailers. A separate individually packaged disposable teflon bailer was dedicated to each well. An obstruction at GW-1 prevented the use of a bailer for sample collection. A peristaltic pump was used to collect the sample at GW-1.

The groundwater samples were submitted for TCL VOCs, TCL SVOCs, and TAL metals analysis using the analytical methods described in Section 4.4. A field blank and trip blank were also submitted to the laboratory for TCL VOCs analysis. A sample collection summary is presented in Table 3.3.

4.0 METHODOLOGY

4.1 GENERAL

Procedures used by CRA to collect, prepare, and handle the various environmental samples and the methods utilized by the laboratory to analyze the samples are described in the following subsections.

4.2 SAMPLE COLLECTION

Soil and sediment samples were collected using a precleaned stainless steel trowel or spoon and placed in a precleaned stainless steel bowl. Equal aliquots were collected from each location and composited in the bowl. Volatile samples were collected directly into the sample bottles and were not subjected to the compositing process.

Groundwater samples were collected using dedicated bailers and clean braided nylon rope. The sample at GW-1 was collected using clean polyethylene peristaltic tubing due to an obstruction in the well. The sump water samples were collected directly into the precleaned laboratory sample containers by submerging the containers directly into the water.

4.3 SAMPLE COLLECTION AND HANDLING

All samples collected for chemical analysis were placed in precleaned laboratory supplied jars. Samples were preserved per laboratory instructions, where appropriate. Samples were labeled with a unique sample number, time, and date of sample collection and instruction for analysis.

A new pair of disposable latex gloves were used to handle each sample between sample locations.

All samples were placed on ice or cooler packers in laboratory supplied coolers immediately after collection and labeling. Test pit soil samples were shipped to Columbia Analytical Services in Rochester, New York (CAS). Hand auger, sump, and groundwater samples were shipped to H2M Laboratories in Melville, New York (H2M). All samples were shipped via overnight courier. Standard Chain of Custody procedures were followed. Clean, dedicated sampling equipment was used at all locations where samples were collected for chemical analysis.

4.4 SAMPLE ANALYSIS METHODS

The soil and water samples were analyzed for TCL VOCs, TCL SVOCs, and TAL metals. The methods of analysis were 8260B (VOCs), 8270C (SVOCs), and 6010B/7470A/7471A (metals), referenced from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846 3rd Edition, USEPA OSWER, November 1986, and subsequent revisions. Reporting limits for the analytes of interest were in accordance with NYSDEC Analytical Services Protocol (ASP) Contract Required Quantitation Limits (CRQLs).

CAS of Rochester, New York, performed the analyses of soil samples from the test pits. The confirmatory hand auger soil samples, sump sediment/water, and groundwater samples were analyzed by H2M of Melville, New York. The laboratories are certified by the New York State Department of Health (NYSDOH) for the categories required to perform the work. The laboratory submitted standard SW-846 deliverables with the analytical data.

4.5 FIELD DECONTAMINATION

All non-dedicated sampling equipment was decontaminated between sample locations. The decontamination procedure of sampling equipment was as follows:

i) laboratory grade glassware detergent;

ii) detergent tap water rinse;

iii) generous tap water rinse; and

iv) distilled/deionized water rinse.

5.0 RESULTS

The following subsections describe the results of the SEI.

5.1 GROUNDWATER FLOW

The results of the hydraulic head measurements (Table 3.1) were used to generate contour maps of hydraulic head distribution in the upper and lower overburden. Figure 5.1 presents a contour map of the hydraulic head distribution in the upper overburden zone. Figure 5.2 presents a contour map of the hydraulic head distribution in the lower overburden zone. Groundwater flows from high hydraulic head to low hydraulic head. Groundwater flow in the upper overburden beneath Operable Unit 1 is indicated to be to the east-southeast. The lower overburden groundwater flow beneath Operable Unit 1 is indicated to be toward the north-northwest in the southern portion of Operable Unit 1 and toward the north-northeast in the northern portion of Operable Unit 1. Vertical hydraulic gradients were downward from the upper overburden to the lower overburden zone.

5.2 ANALYTICAL

Appendix B presents an Analytical Data Assessment and Validation Report for all analytical results obtained during the SEI. The analytical results are summarized in the following subsections.

5.2.1 SOILS

Soils were collected for chemical analyses from the test pits excavations and hand auger sampling. The samples from the test pits were submitted to CAS and analyzed for TCL VOCs, TCL SVOCs, and TAL metals. The hand auger samples were submitted to H2M and analyzed for TCL VOCs. The analytical results for the soil samples are presented in Appendix B. Table 5.1 presents a summary of the detected constituents in soils. The laboratory results presented in Table 5.1 were compared to the NYSDEC Technical and Administrative Guidance Memoranda (TAGM) 4046 Cleanup Objectives. Acetone and 2-butanone were not detected in the followup hand auger sampling, suggesting the low level detections reported for the test pit samples were attributable to laboratory contamination.

All VOC concentrations detected in the soil samples were below the NYSDEC recommended soil cleanup soil objectives. No SVOCs were detected in any soil sample. All of the TAL metals concentrations detected in the soil samples were below the NYSDEC recommended Soil Cleanup Objectives or published New York State and Eastern USA background concentration ranges, except for zinc. Zinc was measured at a concentration of 51.4 milligrams per kilogram (mg/kg) in the sample (S-121898-1) collected from TP-1 and at a concentration of 52.4 mg/kg in the sample (S-121898-2) collected from TP-3. Both samples were collected at the base of the fill in each test pit. The concentrations of zinc in the two samples only marginally exceed the published average background levels (9 to 50 mg/kg) for the Eastern USA.

The results of the soil sampling were consistent with the results obtained in the Phase II Investigation conducted in 1990 by NYSDEC, which did not show the presence of organic chemicals in soil above background conditions in the vicinity.

5.2.2 SEDIMENT/WATER

Sediment and water samples were collected from the two building sumps (designated as Sump 1 and Sump 2) identified during the Site reconnaissance. The samples from the sumps were analyzed for TCL VOCs and TAL metals. The analytical results for the sump sediment and water samples are presented in Appendix B. Table 5.2 presents a summary of the detected chemical constituents in the sediment. Table 5.3 presents a summary of the detected chemical constituents in the water. The laboratory results were compared to the applicable NYSDEC TAGM and Technical and Operation Guidance Standards (TOGS) cleanup objectives and standards.

The data presented in Table 5.2 for the sump sediment samples shows VOCs were detected above the NYSDEC Recommended Soil Cleanup Objectives in the samples from Sump 1 and Sump 2. The NYSDEC Recommended Soil Cleanup Objectives were exceeded in Sump 1 (see Figure 5.2) for the following constituents: 1,1-dichloroethene; 1,2-dichloroethene; trichloroethene; and tetrachloroethene. The NYSDEC Recommended Soil Cleanup Objectives were exceeded in Sump 2 for trichloroethene.

The analytical data presented in Table 5.2 shows metals were detected at concentrations above the NYSDEC criteria. A comparison of the detected metals in the sump sediment with published background and standard ranges of metals (see Table 5.2) in soils, shows that the concentration of copper (771 mg/kg in Sump 1), cadmium (99.5 mg/kg in Sump 1 and 34.0 mg/kg in Sump 2), lead (4550 mg/kg in Sump-1 and 3440 mg/kg in

Sump-2), selenium (8.2 mg/kg in Sump 1), silver (76.9 mg/kg in Sump-2), and zinc (15,300 mg/kg in Sump-1) exceed the standard ranges of metals found in U.S. soils.

The data presented in Table 5.3 for the water samples collected from the sumps shows that VOCs were detected above NYSDEC groundwater standards. Two VOCs were measured above the NYSDEC groundwater standards in the water sample collected from Sump 1. 1,2-Dichloroethene (total) was measured at 84 micrograms per liter (µg/L) and trichloroethene was measured at 3400 µg/L. Three VOCs were measured above the NYSDEC groundwater standards in the water sample collected from Sump 2. 1,1-Dichloroethane, 1,1,1-trichloroethane; and chlorobenzene were measured at 7 µg/L, 6 µg/L, and 7 µg/L, respectively.

Two metals in the water samples from the two sumps were detected at concentrations exceeding the NYSDEC groundwater standards. Silver was measured at a concentration of 75.3 µg/L in the water from Sump 2. Sodium was measured at concentrations of 39,700 µg/L and 20,200 µg/L in the waters from Sump 1 and Sump 2, respectively.

5.2.3 GROUNDWATER

Groundwater samples were collected for chemical analysis from the eight on-Site (Operable Unit 1) monitoring wells. The samples were submitted to H2M and analyzed for TCL VOCs, SVOCs, and TAL metals.

Analytical results for groundwater samples are presented in Appendix B. A summary of detected chemical constituents in groundwater is presented in Table 5.4. The laboratory results presented in Table 5.4 were compared to the New York State groundwater standards presented in the NYSDEC TOGS document (June 1998).

No VOCs were measured above detection limits in the groundwater samples. No SVOCs were detected in any groundwater sample. These results are consistent with the results of the previous sampling of these wells by NYSDEC in August 1990 which showed no detections of VOCs or SVOCs.

The following TAL metals were not detected in any groundwater samples: beryllium, cadmium, cobalt, mercury, selenium, thallium, and zinc. Metals concentrations in the groundwater exceeding the NYSDEC groundwater standards are as follows:

Metal	*Groundwater Standard (µg/L)*	*Location (Concentrations in µg/L)*
Antimony	3	GW-2 (4.4), GW-6S (3.4)
Copper	300	GW-1 (331), GW-2 (648), GW-2S (616), GW-3 (1350)
Sodium	2,000	GW-1 (45,600), GW-2 (24,500), GW-3 (34,600), GS-4 (61,200), GW-4D (61,700), GW-4S (57,200), GW-6 (54,200)
Iron	300	GW-4S (2,810), GW-6 (652), GW-6S (2,310), GW-1 (331), GW-2 (648), GW-2S (616), GW-3 (1,350)
Iron and Manganese	500	GW-2 (687.8), GW-2S (626.6), GW-3 (1,381.4), GW-4S (2858), GW-6 (680.5), GW-6S (2,417)

The NYSDEC has established groundwater guidance value for magnesium of 35,000 µg/L. The guidance value was exceeded in the groundwater sample from GW-1 (58,100 µg/L), GW-2 (56,600 µg/L), and GW-4S (70,800 µg/L).

The occurrence of these metals in groundwater may be natural, does not appear to be associated with any current or former processes or disposal practices at the Site, and does not constitute a significant threat to the environment.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

The test pit excavation samples and follow up hand auger samples did not indicate any areas of disposal or chemical contamination at the Site (Operable Unit 1). Based on the groundwater sampling results, groundwater has not been significantly impacted at the Site.

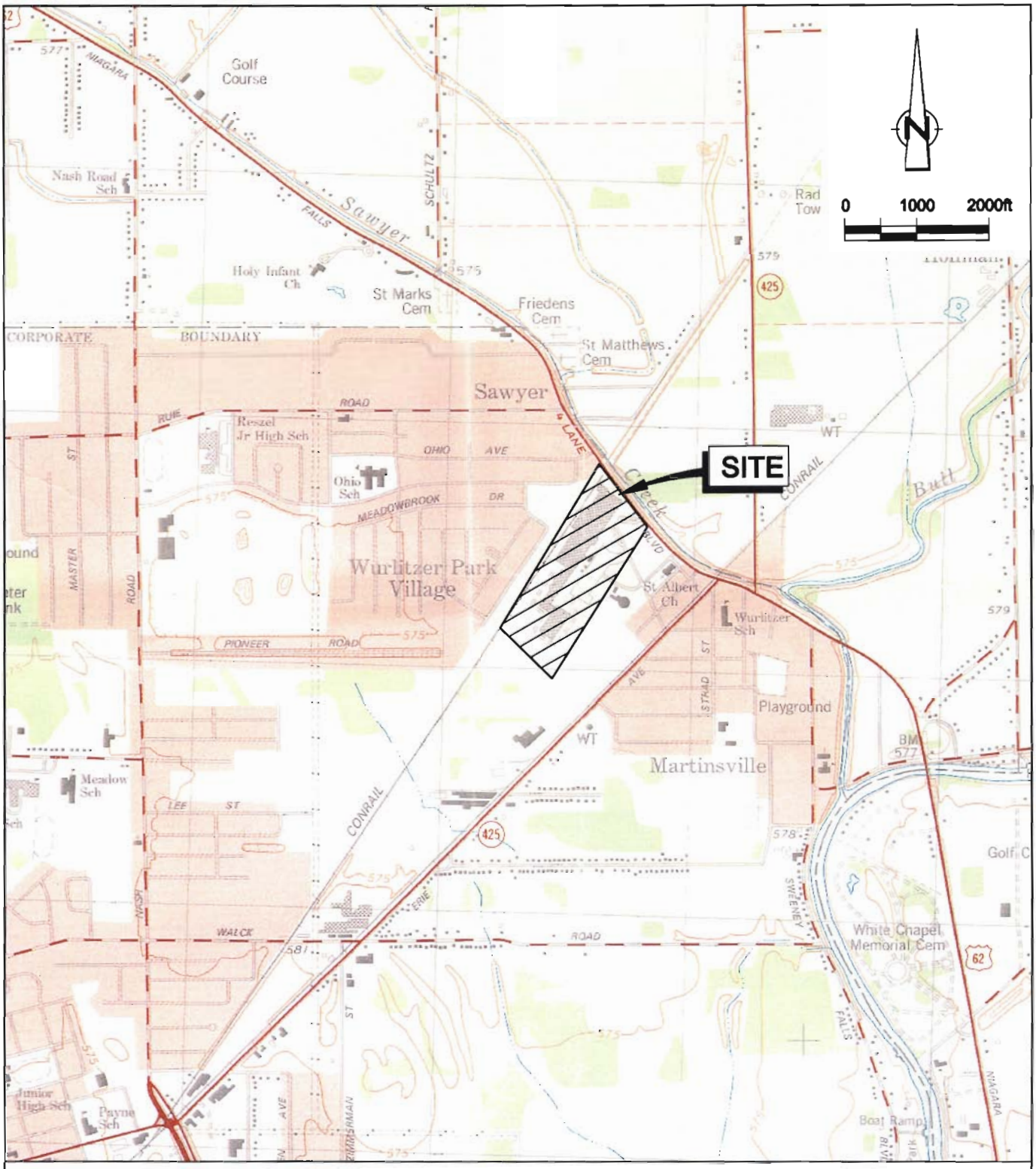
Accumulated water and sediment within Sump 1 and Sump 2 contains elevated levels of chlorinated solvents (in particular trichloroethene) and metals. These sumps should be cleaned by removing and containerizing the water and sediment followed by a thorough washing of the sump walls and removal and containerizing the wash water. The water and sediment generated should be disposed of properly based on its waste characterization. Following the cleaning, water entering the sump should be sampled for analyses of TCL VOCs.

7.0 CERTIFICATION

I hereby certify that this investigation was conducted under my direction and supervision in accordance with the NYSDEC-approved Scope of Work and Work Plan.

Kelly R. McIntosh, Ph.D., P.E.

FIGURES



SOURCE: TONAWANDA EAST, NEW YORK QUADRANGLE, REVISED 1980.

figure 1.1

SITE LOCATION MAP
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
North Tonawanda, New York

CRA

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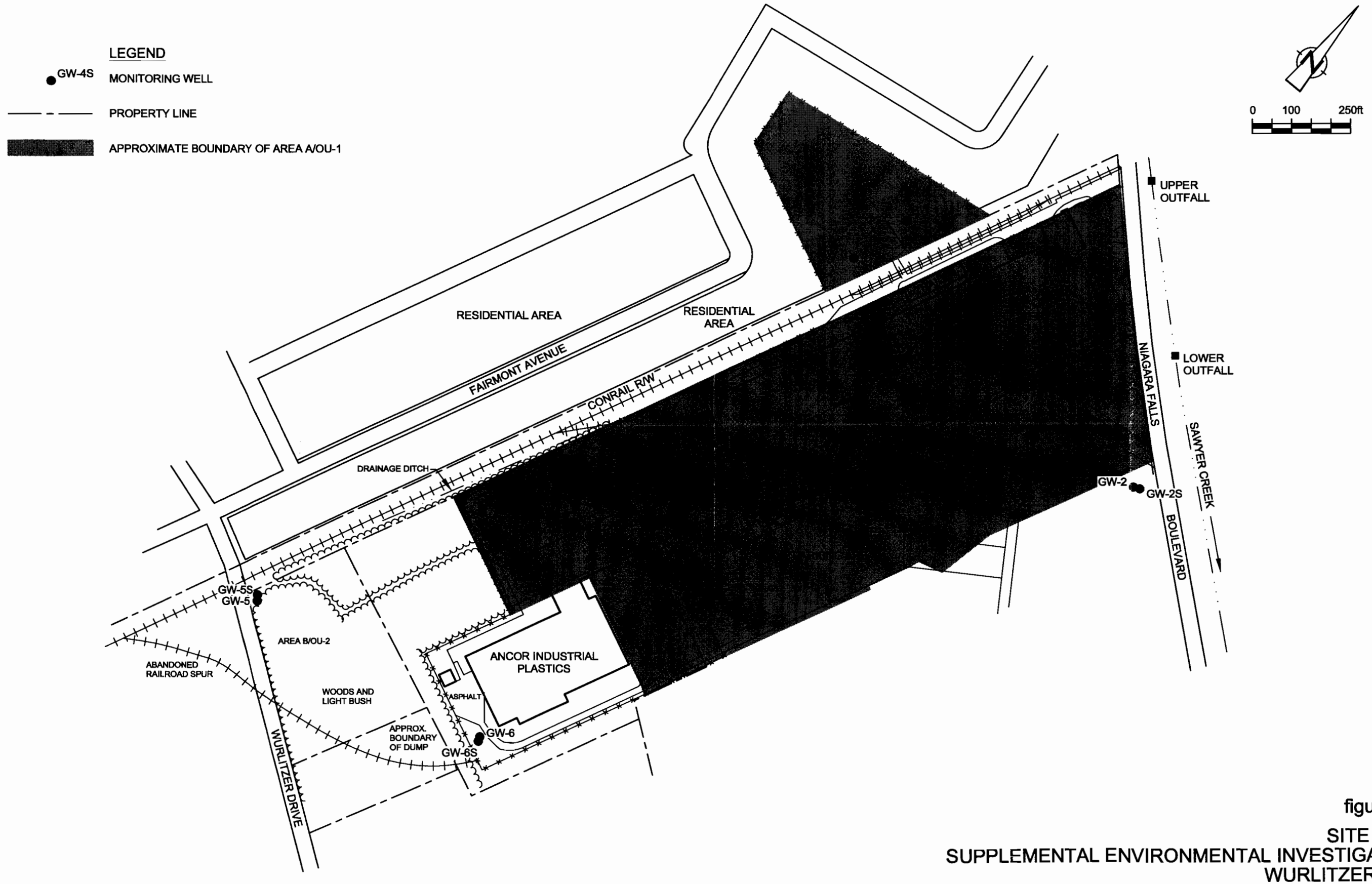


figure 1.2

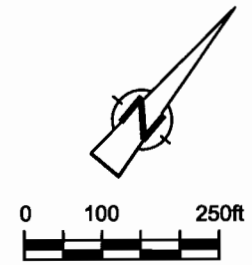
SITE PLAN
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
North Tonawanda, New York

CRA

11336-00(001)GN-NF002 JUN 01/99

LEGEND

- GW-4S — MONITORING WELL
- TP-1 — TEST PIT
- TPHA-1 — HAND AUGER SAMPLE LOCATION
- SUMP 1 — SUMP



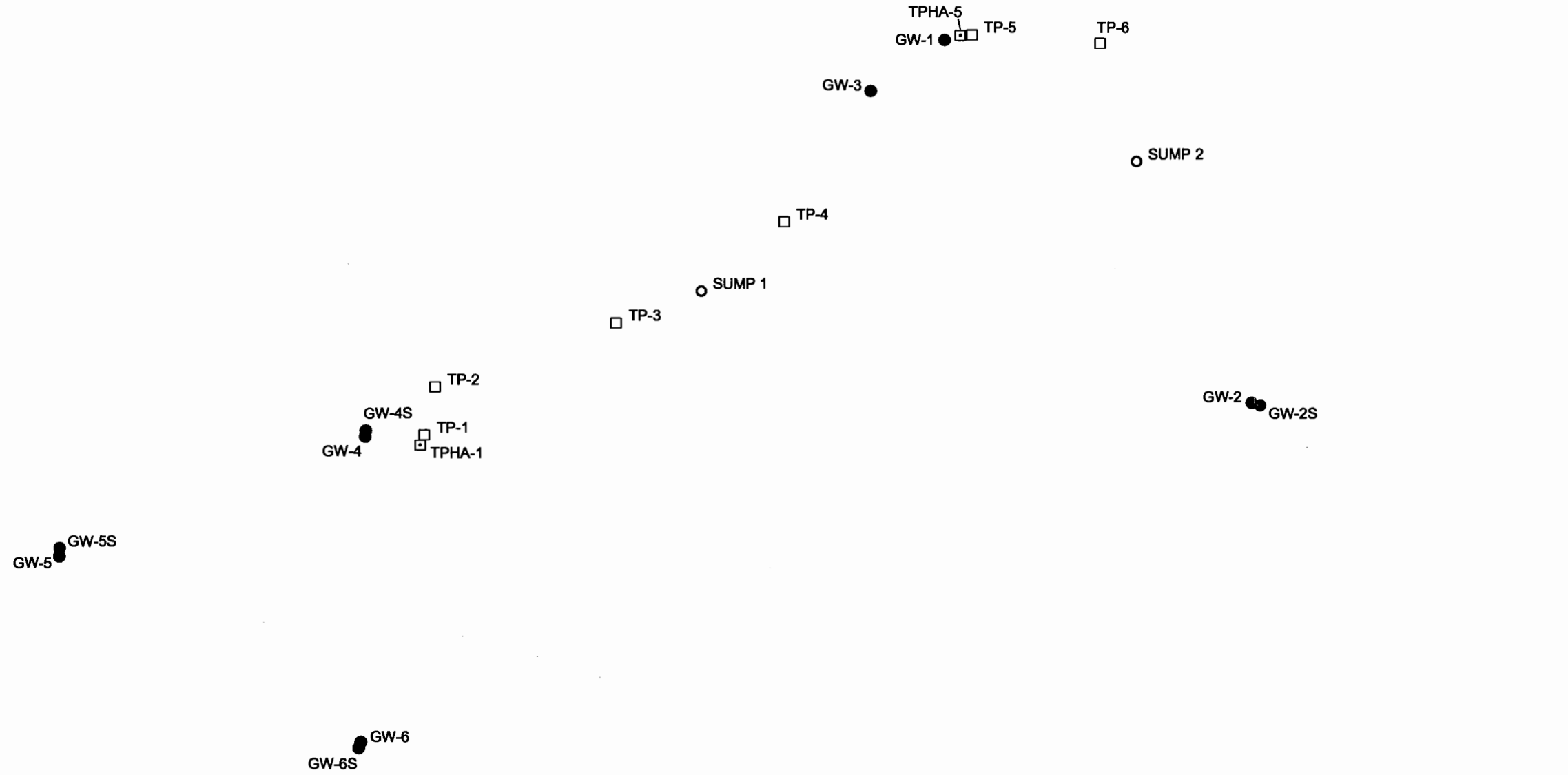


figure 3.1

SAMPLING LOCATIONS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
North Tonawanda, New York

CRA

11336-00(001)GN-NF003 JUN 01/99

LEGEND

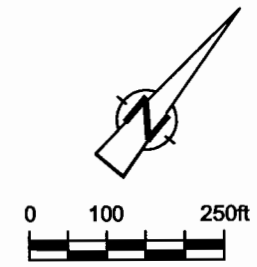
GW-4S — MONITORING WELL - SHALLOW OVERBURDEN ZONE

(571.42) — ELEVATION (ft. AMSL)
(HYDRAULIC HEAD MEASURED ON FEBRUARY 2, 1999)

(NM) — NOT MEASURED

——— EQUIPOTENTIAL LINE

– – – – INFERRED EQUIPOTENTIAL LINE



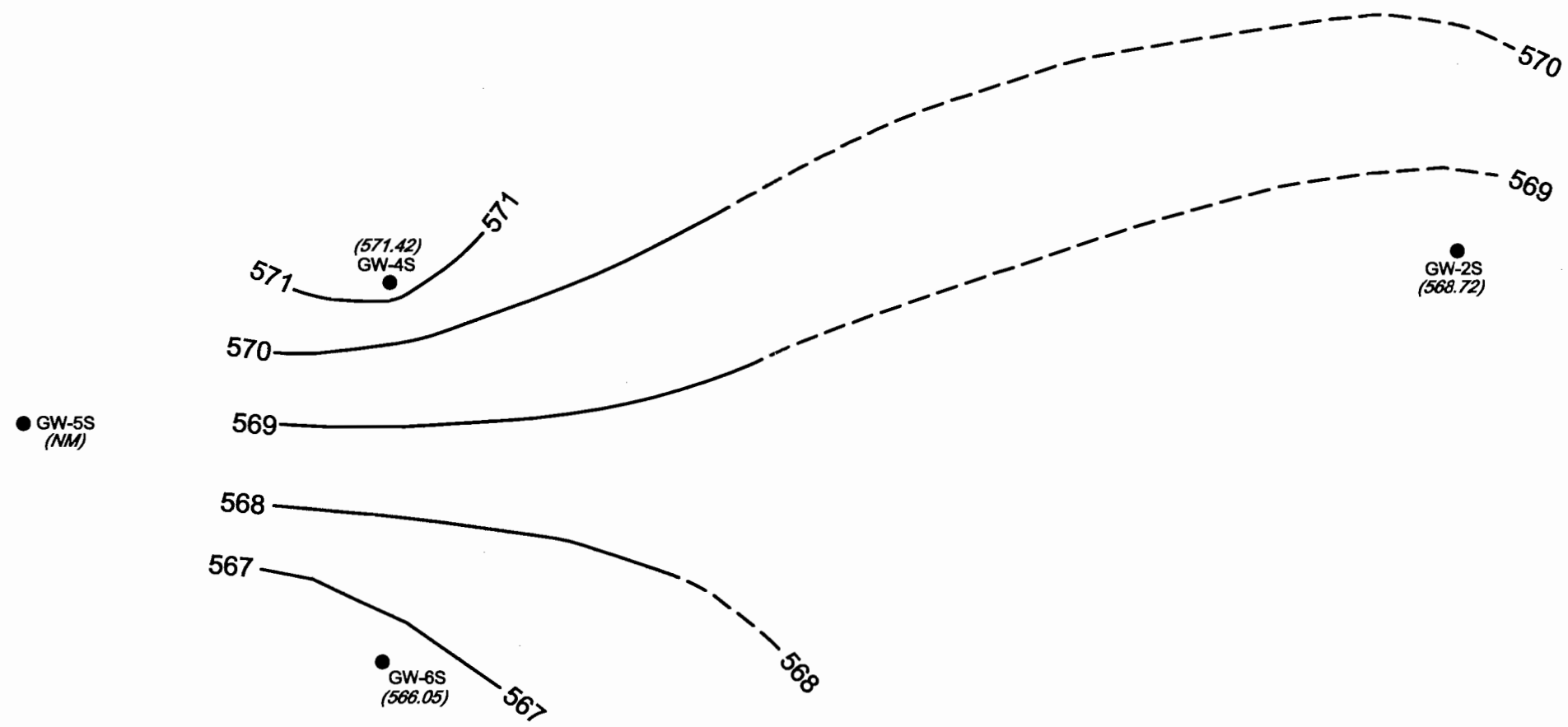


figure 5.1

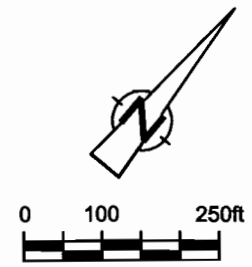
HYDRAULIC HEAD CONTOUR MAP OF UPPER OVERBURDEN ZONE
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
North Tonawanda, New York

CRA

11336-00(001)GN-NF004 JUN 02/99

LEGEND

- GW-1 — MONITORING WELL - DEEP OVERBURDEN ZONE
- *(561.14)* — ELEVATION (ft. AMSL) (HYDRAULIC HEAD MEASURED ON FEBRUARY 2, 1999)
- *(NM)* — NOT MEASURED
- ——— EQUIPOTENTIAL LINE
- – – – – INFERRED EQUIPOTENTIAL LINE



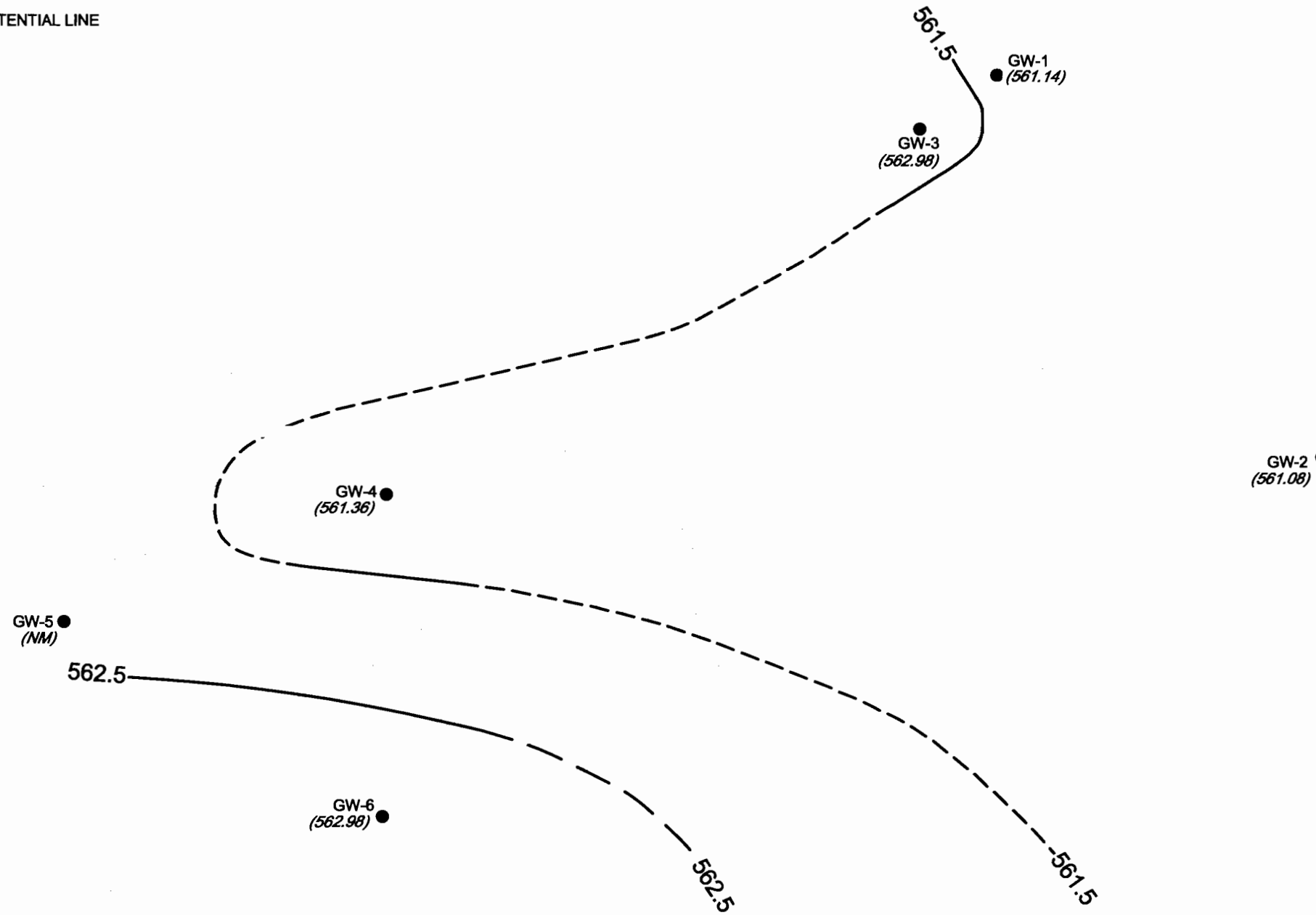


figure 5.2

HYDRAULIC HEAD CONTOUR MAP OF LOWER OVERBURDEN ZONE
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
North Tonawanda, New York

CRA

11336-00(001)GN-NF005 JUN 02/99

TABLES

TABLE 3.1
HYDRAULIC HEAD MEASUREMENTS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK
FEBRUARY 2, 1999

Well I.D.	*Water Level (Ft. BTOC)*	*Elevation (Ft. AMSL)*
GW-1	14.96	561.14
GW-2	14.42	561.08
GW-2S	6.88	568.72
GW-3	12.82	562.98
GW-4	12.44	561.36
GW-4S	2.78	571.42
GW-6	11.22	562.98
GW-6S	8.25	566.05

Notes:
AMSL Above Mean Sea Level.
BTOC Below Top of Casing (reference point).

TABLE 3.2

FIELD PURGING DATA
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK
FEBRUARY 1999

Well	*Date*	*Method*	*Total Purged Volume (Gallons)*	*pH (s.u.)*	*Conductivity (µg/cm)*	*Turbidity (ntu)*	*Temperature (°F)*	*Comments*
GW-1	02/03/99	Peristaltic	15	7.63	1010	NM	45	Clear, colorless
GW-2	02/02/99	Bailer	14	7.11	610	58	50	Clear, colorless
GW-2S	02/02/99	Bailer	2 (dry)	7.23	530	250	45	Clear, colorless
GW-3	02/03/99	Bailer	8.7 (dry)	9.64	360	>1195	51	Slightly cloudy
GW-4	02/03/99	Bailer	13.5	9.38	460	140	50	Clear, colorless
GW-4S	02/03/99	Bailer	4.5	6.87	1650	1069	46	Brown, cloudy
GW-6	02/02/99	Bailer	12 (dry)	8.45	340	583	52	Brown, cloudy
GW-6S	02/02/99	Bailer	1.5 (dry)	6.80	610	1258	46	Cloudy

Notes:
NM Not Measured.
ntu Nephelometric Turbidity Unit.
s.u. Standard Units.

TABLE 3.3
SAMPLE COLLECTION SUMMARY
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Sample I.D.	*Location*	*Matrix*	*Date*	*Time*	*Parameters*	*Laboratory*	*Comments*
S-121898-1	TP-1	Soil	12/18/98	1030	TCL VOCs, TCL SVOCs, TAL Metals	CAS	
S-121898-2	TP-3	Soil	12/18/98	1145	TCL VOCs, TCL SVOCs, TAL Metals	CAS	MS/MSD
S-121898-3	TP-4	Soil	12/18/98	1215	TCL VOCs, TCL SVOCs, TAL Metals	CAS	
S-121898-4	TP-5	Soil	12/18/98	1400	TCL VOCs, TCL SVOCs, TAL Metals	CAS	
S-121898-5	TP-5	Soil	12/18/98	1410	TCL VOCs, TCL SVOCs, TAL Metals	CAS	Duplicate of sample S-121898-4
GW-1	GW-1	Groundwater	02/03/99	1645	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
GW-2	GW-2	Groundwater	02/03/99	1430	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
GW-2S	GW-2S	Groundwater	02/03/99	1500	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
GW-3	GW-3	Groundwater	02/03/99	1700	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
GW-4	GW-4	Groundwater	02/03/99	1530	TCL VOCs, TCL SVOCs, TAL Metals	H2M	MS/MSD
GW-4D	GW-4	Groundwater	02/03/99	1540	TCL VOCs, TCL SVOCs, TAL Metals	H2M	Duplicate of sample GW-4
GW-4S	GW-4S	Groundwater	02/03/99	1600	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
GW-6	GW-6	Groundwater	02/03/99	1330	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
GW-6S	GW-6S	Groundwater	02/03/99	1400	TCL VOCs, TCL SVOCs, TAL Metals	H2M	
SUMP1W	SUMP 1	Water	02/02/99	1400	TCL VOCs, TAL Metals	H2M	

TABLE 3.3
SAMPLE COLLECTION SUMMARY
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Sample I.D.	*Location*	*Matrix*	*Date*	*Time*	*Parameters*	*Laboratory*	*Comments*
SUMP1SED	SUMP 1	Sediment	02/02/99	1400	TCL VOCs, TAL Metals	H2M	
SUMP2W	SUMP 2	Water	02/02/99	1620	TCL VOCs, TAL Metals	H2M	
SUMP2SED	SUMP 2	Sediment	02/02/99	1620	TCL VOCs, TAL Metals	H2M	
TPHA-1S	TPHA-1	Soil	02/03/99	1500	TCL VOCs	H2M	
TPHA-5S	TPHA-5	Soil	02/03/99	1600	TCL VOCs	H2M	
FB-1	NA	Lab Water	02/03/99	1615	TCL VOCs	H2M	Field Blank
Trip Blank	NA	Lab Water	02/03/99	NA	TCL VOCs	H2M	Trip Blank

Notes:
CAS Columbia Analytical Services.
H2M H2M Laboratories.
MS Matrix Spike.
MSD Matrix Spike Duplicate.
NA Not Applicable.
SVOC Semi-Volatile Organic Compounds.
TAL Target Analyte List.
TCL Target Compound List.
VOCs Volatile Organic Compounds.

TABLE 5.1

SUMMARY OF DETECTED CONSTITUENTS IN SOIL
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK

Parameters	*Units*	*NYSDEC RecSoil Cleanup Objectives* [1]	*New York State Background* [1]	*Eastern USA Background* [1]	*Standard Range in U.S. Soils* [2]	*Sample ID:* *Collection Date:* *Location:* *Depth:*	*S-121898-1* *12/18/98* *TP-1* *2.2 ft. BGS*	*S-121898-2* *12/18/98* *TP-3* *1.5 ft. BGS*	*S-121898-3* *12/18/98* *TP-4* *1.9 ft. BGS*	*S-121898-4* *12/18/98* *TP-5* *2.0 ft. BGS*	*S-121898-5* *12/18/98* *TP-5* *2.0 ft. BGS* *(Dup. of S-121898-4)*	*TPHA-1S* *02/03/99* *Adjacent to TP-1* *2.2 feet BGS*	*TPHA-5S* *02/03/99* *Adjacent to TP-1* *2.5 feet BGS*
TCL Volatiles													
Acetone	mg/Kg	0.2					0.190J	ND 0.023J	ND 0.024J	0.091J	0.082J	ND 0.012	ND 0.013
2-Butanone (MEK)	mg/Kg	0.3					0.041J	0.012J	0.020J	0.068J	0.069J	ND 0.012	ND 0.013
Methylene chloride	mg/Kg	0.1					ND 0.006J	ND 0.0058J	ND 0.006J	ND 0.0059J	ND 0.006J	ND 0.012	0.001J
Trichloroethene	mg/Kg	0.7					ND 0.006J	ND 0.0058J	ND 0.006J	ND 0.0059J	ND 0.006J	0.002J	0.001J
TAL Metals													
Aluminum	mg/Kg	SB		33000	7000 to 100000		14300	7260	7030	6840	7190	NA	NA
Arsenic	mg/Kg	7.5 or SB	3 to 12		<0.1 to 73		5.77	8.92	2.21	3.78	3.88	NA	NA
Barium	mg/Kg	300 or SB		15 to 600	10 to 1500		101	40.5	40.7	44.2	50.8	NA	NA
Calcium	mg/Kg	SB	130 to 35000		100 to 280000		3540	34000	60900	56900	65100	NA	NA
Chromium	mg/Kg	10 or SB	1.5 to 40		1 to 1000		17.8	15.9	12.1	10.3	11.5	NA	NA
Cobalt	mg/Kg	30 or SB	2.5 to 60		<0.3 to 70		8.69	8.94	6.16	6.78	8.92	NA	NA
Copper	mg/Kg	25 or SB		1 to 50	<0.1 to 700		9.52	15.7	14.8	15.8	18.8	NA	NA
Iron	mg/Kg	2000 or SB		2000 to 550000	100 to >100000		19000	23900	14300	15700	18600	NA	NA
Lead	mg/Kg	SB [3]		200 to 500 [3]	<10 to 300		10.8	9.94	9.34	8.06	8.69	NA	NA
Magnesium	mg/Kg	SB		100 to 5000	50 to 50000		3300	2980	12700	11800	13300	NA	NA
Manganese	mg/Kg	SB		50 to 5000	<2 to 7000		144	133	241	527	706	NA	NA
Nickel	mg/Kg	13 or SB		0.5 to 25	<5 to 700		17.0	19.5	15.4	14.5	18.2	NA	NA
Potassium	mg/Kg	SB	8500 to 43000		50 to 37000		809	621	781	796	837	NA	NA
Silver	mg/Kg	SB			0.01 to 5		1.19	ND 1.17	ND 1.19	ND 1.19	ND 1.19	NA	NA
Sodium	mg/Kg	SB		6000 to 8000	<500 to 50000		212	271	330	226	271	NA	NA
Thallium	mg/Kg	SB					1.66J	1.30J	3.25J	2.27J	2.52J	NA	NA
Vanadium	mg/Kg	150 or SB		1 to 300	<7 to 300		22.6	20.6	15.5	14.3	14.0	NA	NA
Zinc	mg/Kg	20 or SB		9 to 50	<5 to 2900		51.4	52.4	41.6	38.7	45.0	NA	NA

Notes:
(1) From NYSDEC TAGM Appendix A, Table 4.
(2) After Lindsay 1979 and Shacklette and Boerngen 1984.
(3) Background varies widely. Average background levels in metropolitan or suburban areas or near highways typically range from 200 to 500 mg/kg.
BGS Below Ground Surface.
Dup. Field Duplicate.
J Associated value is estimated.
NA Not analyzed; not applicable
ND Non-detect at associated value.
SB Site Background.
TAL Target Analyte List.
TCL Target Compound List.
Exceedance of Recommended Cleanup Objectives and Published Average Background Concentrations

TABLE 5.2

SUMMARY DETECTED CONSTITUENTS IN SEDIMENTS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER PARK SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

Parameters	Units	*NYSDEC Rec Soil Cleanup Objectives* [1][2]	*New York State Background* [1]	*Eastern USA Background* [1]	*Standard Range in U.S. Soils* [3]	*Sample ID: Collection Date:*	*Sump-1SED 02/02/99*	*Sump-2SED 02/02/99*
TCL Volatiles								
1,1-Dichloroethene	mg/kg	0.4					12J	ND 0.018
1,2-Dichloroethene (total)	mg/kg	0.3 [4]					49J	ND 0.018
Trichloroethene	mg/kg	0.7					3300J	4.7J
Tetrachloroethene	mg/kg	1.4					1.7J	.004J
Xylene (total)	mg/kg	1.2					.098J	ND 0.018
TAL Metals								
Aluminum	mg/kg	SB		33000	7000 to 100000		5480	6140
Arsenic	mg/kg	7.5 or SB	3 to 12		<0.1 to 73		35.2	22.9
Barium	mg/kg	300 or SB		15 to 600	10 to 1500		415J	880J
Beryllium	mg/kg	SB		0 to 1.75			0.37	0.57
Cadmium	mg/kg	1 or SB		0.1 to 1	0.01 to 0.7		99.5	34
Calcium	mg/kg	SB	130 to 35000		100 to 280000		61600	89800
Chromium	mg/kg	10 or SB	1.5 to 40		1 to 1000		542J	118J
Cobalt	mg/kg	30 or SB	2.5 to 60		<0.3 to 70		18.5	11.1
Copper	mg/kg	25 or SB		1 to 50	<1 to 700		771J	468J
Iron	mg/kg	2000 or SB		2000 to 550000	100 to >100000		398000	98100
Lead	mg/kg	SB [5]		200 to 500	<10 to 300		4550J	3440J
Magnesium	mg/kg	SB		100 to 5000	50 to 50000		6040	9980
Manganese	mg/kg	SB		50 to 5000	<2 to 7000		1990	2780
Mercury	mg/kg	0.1		0.001 to 0.2	<0.1 to 3.4		2.1J	1.1J
Nickel	mg/kg	13 or SB		0.5 to 25	<5 to 700		135J	145J
Potassium	mg/kg	SB	8500 to 43000		50 to 37000		482	565
Selenium	mg/kg	2 or SB		0.1 to 3.9	<0.1 to 3.9		8.2	ND 6.7
Silver	mg/kg	SB			0.01 to 5		2.8	76.9
Sodium	mg/kg	SB		6000 to 8000	<500 to 50000		286	244
Vanadium	mg/kg	150 or SB		1 to 300	<7 to 300		31.6	212
Zinc	mg/kg	20 or SB		9 to 50	<5 to 2900		15300	2510

Notes:

(1) From NYSDEC TAGM Appendix A, Table 4.

(2) Recommended soil cleanup objectives are average background concentrations as reported in a 1984 survey of reference material by E. Carol McGovern, NYSDEC.

(3) After Lindsay 1979 and Shacklette and Boerngen 1984.

(4) Soil cleanup objectives for 1,2-dichloroethene (trans).

(5) Background varies widely. Average background levels in metropolitan or suburban areas or near highways typically range from 200 to 500 mg/kg.

J Associated value is estimated.

ND Non-detect at associated value.

SB Site Background.

TAL Target Analyte List.

TCL Target Compound List.

[ ] Exceedance of Recommended Cleanup Objectives and Published Average Background Concentrations.

TABLE 5.3

SUMMARY OF DETECTED CONSTITUENTS IN SUMP WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK

			Sample ID:	*Sump 1W*	*Sump 2W*
			Collection Date:	*02/02/99*	*02/02/99*
			Location:	*Sump 1*	*Sump 2*
Parameters	*Units*	*Groundwater Standard* [1]			
TCL Volatiles					
1,1-Dichloroethane	µg/L	5 (POC)		ND 10	7J
1,2-Dichloroethene (total)	µg/L	5 (POC)		84	3J
1,1,1-Trichloroethane	µg/L	5 (POC)		ND 10	6J
Trichloroethene	µg/L	5 (POC)		3400	4J
Chlorobenzene	µg/L	5 (POC)		ND 10	7J
TAL Metals					
Barium	µg/L	1000		54.8	42.5
Cadmium	µg/L	5		ND 0.50	0.90
Calcium	µg/L			87700	55900
Chromium	µg/L	50		3.6	0.92
Copper	µg/L	200		6.4	90.1
Iron	µg/L	300		40.8	32.6
Lead	µg/L	25		2.4	ND 1.0
Magnesium	µg/L	35000(G)		17100	8890
Manganese	µg/L	300		ND 0.90	36.4
Nickel	µg/L	100		ND 3.2	9.5
Potassium	µg/L			10700	2910
Silver	µg/L	50		1.8	75.3
Sodium	µg/L	20000		39700	20200
Zinc	µg/L	2000(G)		ND 25.3	69.2
Iron and Manganese	µg/L	500		40.8	69.0

Notes:

(1) NYSDEC TOGS (1998) Table 1; Water Class GA; Type H(WS).

Dup. Field Duplicate.

G Guidance Value.

J Associated value is estimated.

ND Non-detect at associated value.

POC Principal Organic Contaminant Standard.

TAL Target Analyte List.

TCL Target Compound List.

[ ] Exceedance of NYSDEC Groundwater Standard or Guidance Value

TABLE 5.4

SUMMARY OF DETECTED CONSTITUENTS IN GROUNDWATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
IRR SUPPLY CENTERS, INC.
TONAWANDA, NEW YORK
FEBRUARY 1999

			Sample ID:	*GW-1*	*GW-2*	*GW-2S*	*GW-3*	*GW-4*	*GW-4D*	*GW-4S*	*GW-6*	*GW-6S*
			Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*
			Location:	*GW-1*	*GW-2*	*GW-2S*	*GW-3*	*GW-4*	*GW-4*	*GW-4S*	*GW-6*	*GW-6S*
Parameters	*Units*	*Groundwater Standard* [1]										
TCL Volatiles												
Toluene	µg/L	5 (POC)		ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	2J	ND 10
Chlorobenzene	µg/L	5 (POC)		ND 10	1J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
TAL Metals												
Aluminum	µg/L			153	390	942	1650	ND 105	125	2970	713	2350
Antimony	µg/L	3		ND 2.9	4.4	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	3.4
Arsenic	µg/L	25		4.9	8.5	ND 2.4	13.8	12.6	10.7	ND 2.4	5.0	ND 2.4
Barium	µg/L	1000		178	104	63.0	120	131	83.2	37.1	56.1	67.1
Calcium	µg/L			69100	67700	92100	24000	14300	15300	223000	19900	133000
Chromium	µg/L	50		ND 0.90	ND 0.90	2.0	1.6	ND 0.90	ND 0.90	4.0	1.6	3.4
Copper	µg/L	200		ND 2.2	5.5	6.2	4.3	ND 2.2	ND 2.2	4.3	3.5	6.7
Iron	µg/L	300		331	648	616	1350	116	121	2810	652	2310
Lead	µg/L	25		ND 1.0	1.8	2.2	1.5	ND 1.0	ND 1.0	1.3	1.1	1.5
Magnesium	µg/L	35000(G)		58100	56600	24100	25700	11500	11900	70800	17800	27600
Manganese	µg/L	300		59.3	39.8	10.6	31.4	2.6	3.2	48.0	28.5	107
Nickel	µg/L	100		ND 3.2	ND 3.2	ND 3.2	ND 3.2	ND 3.2	ND 3.2	3.6	22.5	3.5
Potassium	µg/L			4530	7770	1770	5310	14700	16100	2770	7160	2070
Silver	µg/L	50		0.87	0.68	2.1	ND 0.60	ND 0.60	ND 0.60	ND 0.60	0.65	ND 0.60
Sodium	µg/L	20000		45600	24500	15600	34600	61200	61700	57200	54200	8900
Vanadium	µg/L			ND 1.9	ND 1.9	2.6	3.5	ND 1.9	ND 1.9	5.3	ND 1.9	4.3
Iron and Manganese	µg/L	500		390.3	687.8	626.6	1381.4	118.6	124.2	2858	680.5	2417

Notes:

[1] NYSDEC TOGS (1998) Table 1; Water Class GA; Type H (WS).

NA Not Applicable.

Dup. Field Duplicate.

G Guidance Value.

J Associated value is estimated.

ND Non-detect at associated value.

POC Principal Organic Contaminant Standard.

TAL Target Analyte List.

TCL Target Compound List.

Exceedance of NYSDEC Groundwater Standard or Guidance Value

APPENDIX A

TEST PIT STRATIGRAPHY LOGS

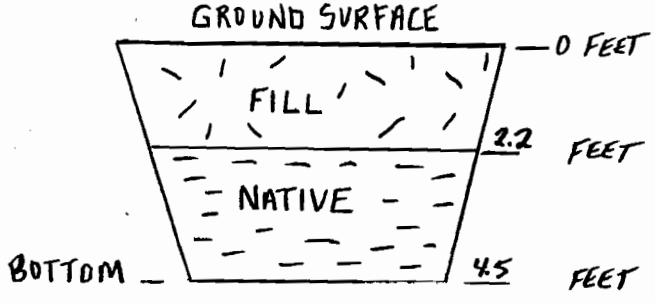
TEST PIT STRATIGRAPHY LOG

Project Name: IRR SUPPLY	**Contractor:** SJB SERVICES, INC.	**Test Pit Designation:** TP-1
Project Number: 11336		**Date Started:** 12/18/98
Client: IRR SUPPLY CENTERS INC.	**Surface Elevation:**	**Date Completed:** 12/18/98
Location: TONAWANDA, NEW YORK	**Test Pit Method** BACKHOE	**CRA Supervisor:** A.P. KISIEL

Location: SOUTHWEST OF MAIN BLDG COMPLEX EAST OF CONRAIL RAILROAD TRACKS

Depth (m/ft) From	At	To	Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors	Sample #	Sample Interval	PID
0		2.2	ML/SM - SILT AND SAND, GRAVEL, SOME CLAY, DARK GRAY, DARK SILTY LAYER BELOW GRAVEL @ 2.2', MOIST, FILL	1	2.2	0
2.2		4.5	CL - CLAY, SOME SILT, TRACE FINE SAND, MOTTLED GRAY AND BROWN			0
	4.5		BOTTOM OF EXCAVATION			

Geologic Profile



Completed by: Andrew P. Kisiel

Date: 12/18/98

CRA

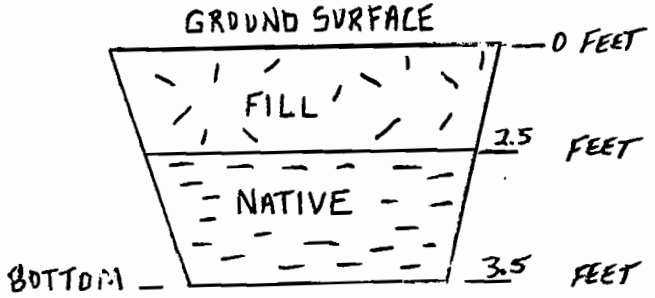
TEST PIT STRATIGRAPHY LOG

Project Name: IRR SUPPLY	**Contractor:** SJB SERVICES, INC.	**Test Pit Designation:** TP-2
Project Number: 11336		**Date Started:** 12/18/98
Client: IRR SUPPLY CENTERS INC.	**Surface Elevation:**	**Date Completed:** 12/18/98
Location: TONAWANDA, NEW YORK	**Test Pit Method** BACKHOE	**CRA Supervisor:** A.P. KISIEL

Location: SOUTH WEST OF MAIN BLDG COMPLEX EAST OF CONRAIL RAILROAD TRACKS

Depth (m/ft) From	At	To	Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors	Sample #	Sample Interval	PID
0		2.5	ML/SM - SILT AND SAND, FINE TO COARSE GRAVEL, CONSTRUCTION RUBBLE, DARK GRAY, MOIST, FILL			0
2.5		3.5	CL - CLAY, SOME SILT, TRACE FINE SAND, MOTTED GRAY AND BROWN, MOIST, NATIVE			0
	3.5		BOTTOM OF EXCAVATION			

Geologic Profile



Completed by: Andrew P. Kisiel

Date: 12/18/98

CRA

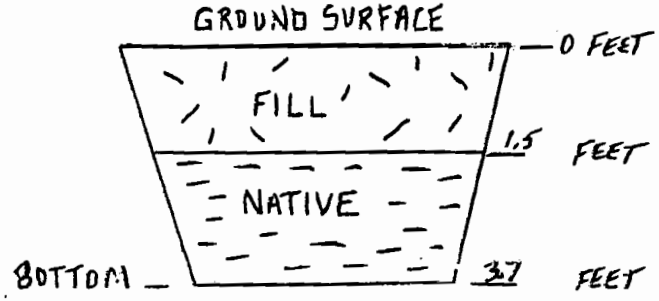
TEST PIT STRATIGRAPHY LOG

Project Name: IRR SUPPLY	**Contractor:** SJB SERVICES, INC	**Test Pit Designation:** TP-3	
Project Number: 11336		**Date Started:** 12/18/98	
Client: IRR SUPPLY CENTERS INC.	**Surface Elevation:**	**Date Completed:** 12/18/98	
Location: TONAWANDA, NEW YORK	**Test Pit Method** BACKHOE	**CRA Supervisor:** A.P. KISIEL	

Location: SOUTH OF IRR SUPPLY

Depth (m/ft) From	At	To	Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors	Sample #	Sample Interval	PID
0		1.5	SM/GM - SAND AND GRAVEL, SOME SILT, CONCRETE RUBBLE, COBBLES, SOME ASPHALT PIECES, DARK BROWN TO BLACK, MOIST, FILL	2	1.5	10.9
1.5		3.7	CL - CLAY, SOME SILT, TRACE FINE SAND, MOTTLED GRAY AND BROWN MOIST, NATIVE			6
	3.7		BOTTOM OF EXCAVATION			

Geologic Profile



Completed by: Andrew P. Kisiel

Date: 12/18/98

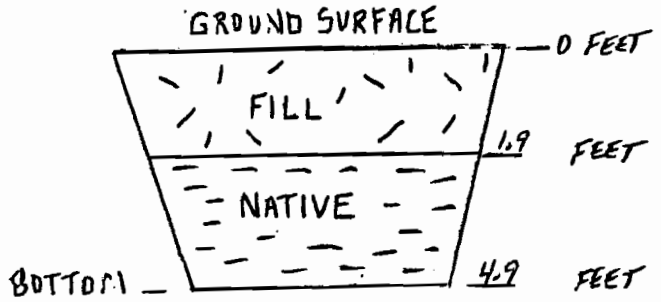
CRA

TEST PIT STRATIGRAPHY LOG

Project Name: IRR SUPPLY	**Contractor:** SJB SERVICES, INC	**Test Pit Designation:** TP-4
Project Number: 11336		**Date Started:** 12/18/98
Client: IRR SUPPLY CENTERS INC.	**Surface Elevation:**	**Date Completed:** 12/18/98
Location: TONAWANDA, NEW YORK	**Test Pit Method** BACKHOE	**CRA Supervisor:** A.P. KISIEL

Location: WEST OF IRR SUPPLY BUILDING

Depth (m/ft) From	At	To	Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors	Sample #	Sample Interval	PID	Geologic Profile
0		1.9	SM/GM - SAND GRAVEL WITH SILT TR. COAL, SLAG, REWORKED SILTY CLAY, BLACK TO DARK BROWN, FILL	3	1.9	0	
1.9		4.9	ML - SILT, SOME CLAY, SAND (FINE) MOTTLED BROWN AND GRAY, SLIGHTLY MOIST, NATIVE			0	
	4.9		BOTTOM OF EXCAVATION				



Completed by: Andrew P. Kisiel

Date: 12/18/98

CRA

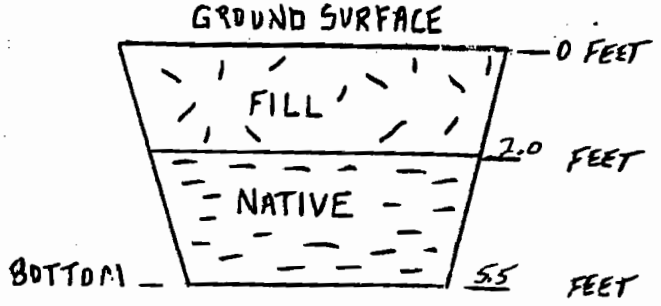
TEST PIT STRATIGRAPHY LOG

Project Name: IRR SUPPLY	**Contractor:** SJB SERVICES, INC.	**Test Pit Designation:** TP-5
Project Number: 11336		**Date Started:** 12/18/98
Client: IRR SUPPLY CENTERS INC.	**Surface Elevation:**	**Date Completed:** 12/18/98
Location: TONAWANDA, NEW YORK	**Test Pit Method** BACKHOE	**CRA Supervisor:** A.P. KISIEL

Location: AREA "A", NORTH OF GRAVEL PARKING AREA

Depth (m/ft) From	At	To	Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors	Sample #	Sample Interval	PID
0		2	SM - SAND, SOME SILT, COAL BROWN TO BLACK, FILL	4,5	2'	0
2		5.5	ML - SILT, SOME FINE SAND, CLAY, MOTTLE GRAY AND BROWN, SLIGHTLY MOIST, NATIVE			
	5.5		BOTTOM OF EXCAVATION			

Geologic Profile



Completed by: Andrew P. Kisiel **Date:** 12/18/98

CRA

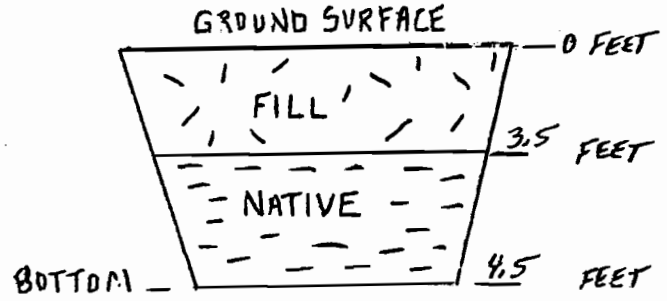
TEST PIT STRATIGRAPHY LOG

Project Name: IRR SUPPLY	**Contractor:** SJB SERVICES, INC.	**Test Pit Designation:** TP-6
Project Number: 11336		**Date Started:** 12/18/98
Client: IRR SUPPLY CENTERS INC.	**Surface Elevation:**	**Date Completed:** 12/8/98
Location: TONAWANDA, NEW YORK	**Test Pit Method** BACKHOE	**CRA Supervisor:** A.P. KISIEL

Location: NORTHEAST OF AREA 'A'; NEAR CONRAIL RAILROAD TRACKS

Depth (m/ft) From	At	To	Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors	Sample #	Sample Interval	PID
0		1.5	SP - SAND, GRAVEL, GRAY TO BLACK, FILL			0
1.5		3.5	ML - SILT, SOME SAND, GRAVEL (REWORKED), BROWN, FILL			0
3.5		4.5	CL - CLAY, SOME SILT, TRACE FINE SAND, MOTTLED GRAY AND BROWN, NATIVE			0
	4.5		BOTTOM OF EXCAVATION			

Geologic Profile



Completed by: Andrew P. Kisiel

Date: 12/18/98

CRA

5.0 LABORATORY CONTROL SAMPLE (LCS) ANALYSES

LCSs are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. LCSs were prepared and analyzed with each batch of analytical samples.

5.1 ORGANICS

All SVOC and most VOC LCS recoveries were acceptable for the compounds of interest. Associated sample results impacted by outlying VOC LCS recoveries were qualified as estimated (see Table 6).

5.2 METALS

LCSs were reported for all metals analyses. All LCS analyses yielded acceptable recoveries.

8.0 FIELD QA/QC

8.1 TRIP BLANKS

Trip blanks are submitted with water samples requiring VOC analyses to monitor the existence and magnitude of contamination resulting from sample transport and storage. One trip blank was submitted for this investigation, and all results were non-detect for the compounds of interest.

8.2 FIELD BLANKS

The purpose of field blank analysis is to determine the existence and magnitude of contamination resulting from field sampling activities, sample transport, and storage. One field blank was collected by pouring deionized water supplied by the laboratory into a sample bottle.

Sample FB-1 was submitted as the field blank. All results were non-detect except for methylene chloride. Methylene chloride was not detected in the associated samples, and no qualification of the data was necessary.

8.3 FIELD DUPLICATES

To assess analytical and sampling precision, two field duplicates were collected and submitted "blind" to the laboratory, as identified in Tables 1A and 1B.

All sample results demonstrated acceptable reproducibility, indicating good sampling and analytical precision.

TABLE 1A

SAMPLE COLLECTION SUMMARY
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998

Sample ID	*Location*	*Date*	*Time*	*Analyses*	*Comments*
S-121898-1	S-1	12/18/98	1030	TCL VOCs, TCL SVOCs, TAL metals	
S-121898-2	S-2	12/18/98	1145	TCL VOCs, TCL SVOCs, TAL metals	MS/MSD
S-121898-3	S-3	12/18/98	1215	TCL VOCs, TCL SVOCs, TAL metals	
S-121898-4	S-4	12/18/98	1400	TCL VOCs, TCL SVOCs, TAL metals	
S-121898-5	S-4	12/18/98	1410	TCL VOCs, TCL SVOCs, TAL metals	Dup. of S-121898-4

Notes:
Dup. Field Duplicate.
MS Matrix Spike.
MSD Matrix Spike Duplicate.
SVOCs Semi-Volatile Organic Compounds.
TAL Target Analyte List.
TCL Target Compound List.
VOCs Volatile Organic Compounds.

TABLE 2A
ANALYTICAL RESULTS SUMMARY - SOILS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998

Sample ID:	*S-121898-1*	*S-121898-2*	*S-121898-3*	*S-121898-4*	*S-121898-5*
Collection Date:	*12/18/98*	*12/18/98*	*12/18/98*	*12/18/98*	*12/18/98 (Dup. Of S-121898-4)*
Parameters	***Units***				
TCL Volatiles					
Acetone	µg/Kg	190J	ND 23J	ND 24J	91J	82J
Benzene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9	ND 6.0J
Bromodichloromethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9	ND 6.0J
Bromoform	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9	ND 6.0J
Bromomethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9	ND 6.0J
2-Butanone (MEK)	µg/Kg	41J	12J	20J	68J	69J
Carbon disulfide	µg/Kg	ND 12J	ND 12J	ND 12J	ND 12J	ND 12J
Carbon tetrachloride	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Chlorobenzene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Chloroethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Chloroform	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Chloromethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Dibromochloromethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,1-Dichloroethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,2-Dichloroethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,1-Dichloroethene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
cis-1,2-Dichloroethene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
trans-1,2-Dichloroethene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,2-Dichloropropane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
cis-1,3-Dichloropene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
trans-1,3-Dichloropropene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Ethylbenzene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
2-Hexanone	µg/Kg	ND 12J	ND 12J	ND 12J	ND 12J	ND 12J
Methylene chloride	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
4-Methyl-2-pentanone (MIBK)	µg/Kg	ND 12J	ND 12J	ND 12J	ND 12J	ND 12J
Styrene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,1,2,2-Tetrachloroethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Tetrachloroethene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Toluene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,1,1-Trichloroethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
1,1,2-Trichloroethane	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Trichloroethene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
Vinyl chloride	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J
o-Xylene	µg/Kg	ND 6.0J	ND 5.8J	ND 6.0J	ND 5.9J	ND 6.0J

TABLE 2A
ANALYTICAL RESULTS SUMMARY - SOILS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998

	Sample ID:	*S-121898-1*	*S-121898-2*	*S-121898-3*	*S-121898-4*	*S-121898-5*
	Collection Date:	*12/18/98*	*12/18/98*	*12/18/98*	*12/18/98*	*12/18/98 (Dup. Of S-121898-4)*
Parameters	***Units***					
bis(2-Ethylhexyl)phthalate	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Fluoranthene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
TCL Semi-Volatiles (Cont'd.)						
Fluorene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Hexachlorobenzene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Hexachlorobutadiene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Hexachlorocyclopentadiene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Hexachloroethane	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Isophorone	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
2-Methylnaphthalene	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
4,6-Dinitro-2-methylphenol	µg/Kg	ND 1500	ND 1500	ND 1600	ND 1500	ND 1500
4-Chloro-3-methylphenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
2-Methylphenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
4-Methylphenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
Naphthalene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
2-Nitroaniline	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
3-Nitroaniline	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
4-Nitroaniline	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Nitrobenzene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
2-Nitrophenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
4-Nitrophenol	µg/Kg	ND 1500	ND 1500	ND 1600	ND 1500	ND 1500
n-Nitrosodimethylamine	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
n-Nitrosodiphenylamine	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Di-n-octyl phthalate	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Pentachlorophenol	µg/Kg	ND 1500	ND 1500	ND 1600	ND 1500	ND 1500
Phenanthrene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Phenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
4-Bromophenyl phenyl ether	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
4-Chlorophenyl phenyl ether	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
n-Nitroso-di-n-propylamine	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
Pyrene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
1,2,4-Trichlorobenzene	µg/Kg	ND 390	ND 390	ND 390	ND 390	ND 390
2,4,6-Trichlorophenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800
2,4,5-Trichlorophenol	µg/Kg	ND 800	ND 780	ND 800	ND 800	ND 800

TABLE 2A
ANALYTICAL RESULTS SUMMARY - SOILS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998

Parameters	*Units*	*Sample ID:* *Collection Date:* S-121898-1 12/18/98	S-121898-2 12/18/98	S-121898-3 12/18/98	S-121898-4 12/18/98	S-121898-5 12/18/98 (Dup. Of S-121898-4)
TAL Metals						
Aluminum	mg/Kg	14300	7260	7030	6840	7190
Antimony	mg/Kg	R	R	R	R	R
Arsenic	mg/Kg	5.77	8.92	2.21	3.78	3.88
Barium	mg/Kg	101	40.5	40.7	44.2	50.8
Beryllium	mg/Kg	ND 0.596	ND 0.585	ND 0.597	ND 0.594	ND 0.595
Cadmium	mg/Kg	ND 0.596	ND 0.585	ND 0.597	ND 0.594	ND 0.595
Calcium	mg/Kg	3540	34000	60900	56900	65100
Chromium	mg/Kg	17.8	15.9	12.1	10.3	11.5
Cobalt	mg/Kg	8.69	8.94	6.16	6.78	8.92
Copper	mg/Kg	9.52	15.7	14.8	15.8	18.8
Iron	mg/Kg	19000	23900	14300	15700	18600
Lead	mg/Kg	10.8	9.94	9.34	8.06	8.69
Magnesium	mg/Kg	3300	2980	12700	11800	13300
Manganese	mg/Kg	144	133	241	527	706
Mercury	mg/Kg	ND 0.0596	ND 0.0585	ND 0.0597	ND 0.0594	ND 0.0595
Nickel	mg/Kg	17.0	19.5	15.4	14.5	18.2
Potassium	mg/Kg	809	621	781	796	837
Selenium	mg/Kg	ND 0.596	ND 0.585	ND 2.99	ND 0.594	ND 2.98
Silver	mg/Kg	1.19	ND 1.17	ND 1.19	ND 1.19	ND 1.19
Sodium	mg/Kg	212	271	330	226	271
Thallium	mg/Kg	1.66J	1.30J	3.25J	2.27J	2.52J
Vanadium	mg/Kg	22.6	20.6	15.5	14.3	14.0
Zinc	mg/Kg	51.4	52.4	41.6	38.7	45.0

Notes:
Dup. Field Duplicate.
J Associated value is estimated.
ND Non-detect at associated value.
R Data Rejected.
TAL Target Analyte List.
TCL Target Compound List.

TABLE 2B
ANALYTICAL RESULTS SUMMARY - SOILS/SEDIMENTS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

Parameters	*Sample ID:* / *Collection Date:* / *Units*	*SUMP1SED* 02/02/99	*SUMP2SED* 02/02/99	*TPHA-1S* 02/03/99	*TPHA-5S* 02/03/99
TCL Volatiles					
Chloromethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Bromomethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Vinyl chloride	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Chloroethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Methylene chloride	µg/Kg	ND 490000	ND 18	ND 12	1J
Acetone	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Carbon disulfide	µg/Kg	ND 490000	ND 18	ND 12	ND 13
1,1-Dichloroethene	µg/Kg	12000J	ND 18	ND 12	ND 13
1,1-Dichloroethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
1,2-Dichloroethene (total)	µg/Kg	49000J	ND 18	ND 12	ND 13
2-Butanone	µg/Kg	ND 490000J	ND 18	ND 12	ND 13
Chloroform	µg/Kg	ND 490000	ND 18	ND 12	ND 13
1,2-Dichloroethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
1,1,1-Trichloroethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Carbon tetrachloride	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Bromodichloromethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
1,2-Dichloropropane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
cis-1,3-Dichloropropene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Trichloroethene	µg/Kg	3300000J	4700J	2J	1J
Benzene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Dibromochloromethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
trans-1,3-Dichloropropene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
1,1,2-Trichloroethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Bromoform	µg/Kg	ND 490000	ND 18	ND 12	ND 13
4-Methyl-2-pentanone	µg/Kg	ND 490000	ND 18	ND 12	ND 13
2-Hexanone	µg/Kg	ND 490000J	ND 18	ND 12	ND 13
Tetrachloroethene	µg/Kg	1700J	4J	ND 12	ND 13
1,1,2,2-Tetrachloroethane	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Toluene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Chlorobenzene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Ethylbenzene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Styrene	µg/Kg	ND 490000	ND 18	ND 12	ND 13
Xylene (total)	µg/Kg	98J	ND 18	ND 12	ND 13

TABLE 2B
ANALYTICAL RESULTS SUMMARY - SOILS/SEDIMENTS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

Parameters	*Sample ID:* / *Collection Date:* / *Units*	*SUMP1SED* *02/02/99*	*SUMP2SED* *02/02/99*	*TPHA-1S* *02/03/99*	*TPHA-5S* *02/03/99*
TAL Metals					
Aluminum	mg/Kg	5480	6140	-	-
Antimony	mg/Kg	ND 11.3J	ND 10.0J	-	-
Arsenic	mg/Kg	35.2	22.9	-	-
Barium	mg/Kg	415J	880J	-	-
Beryllium	mg/Kg	0.37	0.57	-	-
Cadmium	mg/Kg	99.5	34.0	-	-
Calcium	mg/Kg	61600	89800	-	-
Chromium	mg/Kg	542J	118J	-	-
Cobalt	mg/Kg	18.5	11.1	-	-
Copper	mg/Kg	771J	468J	-	-
Iron	mg/Kg	398000	98100	-	-
Lead	mg/Kg	4550J	3440J	-	-
Magnesium	mg/Kg	6040	9980	-	-
Manganese	mg/Kg	1990	2780	-	-
Mercury	mg/Kg	2.1J	1.1J	-	-
Nickel	mg/Kg	135J	145J	-	-
Potassium	mg/Kg	482	565	-	-
Selenium	mg/Kg	8.2	ND 6.7	-	-
Silver	mg/Kg	2.8	76.9	-	-
Sodium	mg/Kg	286	244	-	-
Thallium	mg/Kg	ND 4.7	ND 4.2	-	-
Vanadium	mg/Kg	31.6	212	-	-
Zinc	mg/Kg	15300	2510	-	-

Notes:
- Not Applicable.
J Associated value is estimated.
ND Non-detect at associated value.
TAL Target Analyte List.
TCL Target Compound List.

TABLE 2C
ANALYTICAL RESULTS SUMMARY - WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

	Sample ID:	*GW-1*	*GW-2*	*GW-2S*	*GW-3*	*GW-4*	*GW-4D*
	Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99 (Dup. Of GW-4)*
Parameters	***Units***						
TCL Volatiles							
Chloromethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acetone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Dibromochloromethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	µg/L	ND 10	1J	ND 10	ND 10	ND 10	ND 10
Ethylbenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylene (total)	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 2C
ANALYTICAL RESULTS SUMMARY - WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

	Sample ID:	*GW-1*	*GW-2*	*GW-2S*	*GW-3*	*GW-4*	*GW-4D*
	Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99*	*02/03/99 (Dup. Of GW-4)*
Parameters	***Units***						
TCL Semi-Volatiles							
Phenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
bis(2-Chloroethyl)ether	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Chlorophenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,4-Dichlorobenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichlorobenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylphenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-oxybis-(1-chloropropane)	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
n-Nitroso-di-n-propylamine	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
bis(2-Chloroethoxy)methane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2.4-Dichlorophenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Naphthalene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	µg/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	µg/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethylphthalate	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	µg/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 2C
ANALYTICAL RESULTS SUMMARY - WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

	Sample ID:	*GW-4S*	*GW-6*	*GW-6S*	*SUMP1W*	*SUMP2W*
	Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/02/99*	*02/02/99*
Parameters	***Units***					
TCL Volatiles						
Chloromethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Acetone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	7J
1,2-Dichloroethene (total)	µg/L	ND 10	ND 10	ND 10	84	3J
2-Butanone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	6J
Carbon tetrachloride	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	µg/L	ND 10	ND 10	ND 10	3400	4J
Benzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Dibromochloromethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	µg/L	ND 10	2J	ND 10	ND 10	ND 10
Chlorobenzene	µg/L	ND 10	ND 10	ND 10	ND 10	7J
Ethylbenzene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10
Xylene (total)	µg/L	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 2C
ANALYTICAL RESULTS SUMMARY - WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

	Sample ID:	*GW-4S*	*GW-6*	*GW-6S*	*SUMP1W*	*SUMP2W*
	Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/02/99*	*02/02/99*
Parameters	***Units***					
TCL Semi-Volatiles						
Phenol	µg/L	ND 10	ND 10	ND 10	-	-
bis(2-Chloroethyl)ether	µg/L	ND 10	ND 10	ND 10	-	-
2-Chlorophenol	µg/L	ND 10	ND 10	ND 10	-	-
1,3-Dichlorobenzene	µg/L	ND 10	ND 10	ND 10	-	-
1,4-Dichlorobenzene	µg/L	ND 10	ND 10	ND 10	-	-
1,2-Dichlorobenzene	µg/L	ND 10	ND 10	ND 10	-	-
2-Methylphenol	µg/L	ND 10	ND 10	ND 10	-	-
2,2'-oxybis-(1-chloropropane)	µg/L	ND 10	ND 10	ND 10	-	-
4-Methylphenol	µg/L	ND 10	ND 10	ND 10	-	-
n-Nitroso-di-n-propylamine	µg/L	ND 10	ND 10	ND 10	-	-
Hexachloroethane	µg/L	ND 10	ND 10	ND 10	-	-
Nitrobenzene	µg/L	ND 10	ND 10	ND 10	-	-
Isophorone	µg/L	ND 10	ND 10	ND 10	-	-
2-Nitrophenol	µg/L	ND 10	ND 10	ND 10	-	-
2,4-Dimethylphenol	µg/L	ND 10	ND 10	ND 10	-	-
bis(2-Chloroethoxy)methane	µg/L	ND 10	ND 10	ND 10	-	-
2.4-Dichlorophenol	µg/L	ND 10	ND 10	ND 10	-	-
1,2,4-Trichlorobenzene	µg/L	ND 10	ND 10	ND 10	-	-
Naphthalene	µg/L	ND 10	ND 10	ND 10	-	-
4-Chloroaniline	µg/L	ND 10	ND 10	ND 10	-	-
Hexachlorobutadiene	µg/L	ND 10	ND 10	ND 10	-	-
4-Chloro-3-methylphenol	µg/L	ND 10	ND 10	ND 10	-	-
2-Methylnaphthalene	µg/L	ND 10	ND 10	ND 10	-	-
Hexachlorocyclopentadiene	µg/L	ND 10	ND 10	ND 10	-	-
2,4,6-Trichlorophenol	µg/L	ND 10	ND 10	ND 10	-	-
2,4,5-Trichlorophenol	µg/L	ND 25	ND 25	ND 25	-	-
2-Chloronaphthalene	µg/L	ND 10	ND 10	ND 10	-	-
2-Nitroaniline	µg/L	ND 25	ND 25	ND 25	-	-
Dimethylphthalate	µg/L	ND 10	ND 10	ND 10	-	-
Acenaphthylene	µg/L	ND 10	ND 10	ND 10	-	-
2,6-Dinitrotoluene	µg/L	ND 10	ND 10	ND 10	-	-
3-Nitroaniline	µg/L	ND 25	ND 25	ND 25	-	-
Acenaphthene	µg/L	ND 10	ND 10	ND 10	-	-

TABLE 2C
ANALYTICAL RESULTS SUMMARY - WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

	Sample ID:	*GW-4S*	*GW-6*	*GW-6S*	*SUMP1W*	*SUMP2W*
	Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/02/99*	*02/02/99*
Parameters	***Units***					
TCL Semi-Volatiles (Cont'd.)						
2,4-Dinitrophenol	µg/L	ND 25	ND 25	ND 25	-	-
4-Nitrophenol	µg/L	ND 25	ND 25	ND 25	-	-
Dibenzofuran	µg/L	ND 10	ND 10	ND 10	-	-
2,4-Dinitrotoluene	µg/L	ND 10	ND 10	ND 10	-	-
Diethylphthalate	µg/L	ND 10	ND 10	ND 10	-	-
Fluorene	µg/L	ND 10	ND 10	ND 10	-	-
4-Chlorophenyl-phenylether	µg/L	ND 10	ND 10	ND 10	-	-
4-Nitroaniline	µg/L	ND 25	ND 25	ND 25	-	-
4,6-Dinitro-2-methylphenol	µg/L	ND 25	ND 25	ND 25	-	-
n-Nitrosodiphenylamine	µg/L	ND 10	ND 10	ND 10	-	-
4-Bromophenyl-phenylether	µg/L	ND 10	ND 10	ND 10	-	-
Hexachlorobenzene	µg/L	ND 10	ND 10	ND 10	-	-
Pentachlorophenol	µg/L	ND 25	ND 25	ND 25	-	-
Phenanthrene	µg/L	ND 10	ND 10	ND 10	-	-
Anthracene	µg/L	ND 10	ND 10	ND 10	-	-
Carbazole	µg/L	ND 10	ND 10	ND 10	-	-
di-n-Butylphthalate	µg/L	ND 10	ND 10	ND 10	-	-
Fluoranthene	µg/L	ND 10	ND 10	ND 10	-	-
Pyrene	µg/L	ND 10	ND 10	ND 10	-	-
Butylbenzylphthalate	µg/L	ND 10	ND 10	ND 10	-	-
Benzo(a)anthracene	µg/L	ND 10	ND 10	ND 10	-	-
3,3'-Dichlorobenzidine	µg/L	ND 10	ND 10	ND 10	-	-
Chrysene	µg/L	ND 10	ND 10	ND 10	-	-
bis(2-Ethylhexyl)phthalate	µg/L	ND 10	ND 10	ND 10	-	-
di-n-Octylphthalate	µg/L	ND 10	ND 10	ND 10	-	-
Benzo(b)fluoranthene	µg/L	ND 10	ND 10	ND 10	-	-
Benzo(k)fluoranthene	µg/L	ND 10	ND 10	ND 10	-	-
Benzo(a)pyrene	µg/L	ND 10	ND 10	ND 10	-	-
Indeno(1,2,3-cd)pyrene	µg/L	ND 10	ND 10	ND 10	-	-
Dibenz(a,h)anthracene	µg/L	ND 10	ND 10	ND 10	-	-
Benzo(g,h,i)perylene	µg/L	ND 10	ND 10	ND 10	-	-

TABLE 2C
ANALYTICAL RESULTS SUMMARY - WATER
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
FEBRUARY 1999

	Sample ID:	*GW-4S*	*GW-6*	*GW-6S*	*SUMP1W*	*SUMP2W*
	Collection Date:	*02/03/99*	*02/03/99*	*02/03/99*	*02/02/99*	*02/02/99*
Parameters	***Units***					
TAL Metals						
Aluminum	µg/L	2970	713	2350	ND 49.3	ND 28.4
Antimony	µg/L	ND 2.9	ND 2.9	3.4	ND 2.9	ND 2.9
Arsenic	µg/L	ND 2.4	5.0	ND 2.4	ND 2.4	ND 2.4
Barium	µg/L	37.1	56.1	67.1	54.8	42.5
Beryllium	µg/L	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30
Cadmium	µg/L	ND 0.50	ND 0.50	ND 0.50	ND 0.50	0.90
Calcium	µg/L	223000	19900	133000	87700	55900
Chromium	µg/L	4.0	1.6	3.4	3.6	0.92
Cobalt	µg/L	ND 3.6	ND 3.6	ND 3.6	ND 3.6	ND 3.6
Copper	µg/L	4.3	3.5	6.7	6.4	90.1
Iron	µg/L	2810	652	2310	40.8	32.6
Lead	µg/L	1.3	1.1	1.5	2.4	ND 1.0
Magnesium	µg/L	70800	17800	27600	17100	8890
Manganese	µg/L	48.0	28.5	107	ND 0.90	36.4
Mercury	µg/L	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10
Nickel	µg/L	3.6	22.5	3.5	ND 3.2	9.5
Potassium	µg/L	2770	7160	2070	10700	2910
Selenium	µg/L	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9
Silver	µg/L	ND 0.60	0.65	ND 0.60	1.8	75.3
Sodium	µg/L	57200	54200	8900	39700	20200
Thallium	µg/L	ND 3.0	ND 1.9	ND 2.3	ND 2.7	ND 2.8
Vanadium	µg/L	5.3	ND 1.9	4.3	ND 1.9	ND 1.9
Zinc	µg/L	ND 17.9	ND 9.8	ND 19.1	ND 25.3	69.2

Notes:
- Not Applicable.
Dup. Field Duplicate.
J Associated value is estimated.
ND Non-detect at associated value.
TAL Target Analyte List.
TCL Target Compound List.

TABLE 3

SAMPLE HOLDING TIME CRITERIA AND ANALYTICAL METHOD SUMMARY
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Parameter	*Matrix*	*Analytical Method*	*Collection to Preparative Extraction (days)*	*Collection to Analysis (days)*
TCL VOCs	Soil	8260 (1)	-	14
TCL SVOCs	Soil	8270 (1)	14	40
TAL Metals (Except Mercury)	Soil	6010 (1)	-	180
Mercury	Soil	7471 (1)	-	28
TCL VOCs	Water	8260 (1)	-	14
TCL SVOCs	Water	8270 (1)	7	40
TAL Metals (Except Mercury)	Water	6010 (1)	-	180
Mercury	Water	7470 (1)	-	28

Notes:

- Not Applicable.
(1) Referenced from "Test Methods for Evaluating Solid Waste", USEPA SW-846, Third Edition, 1986 with subsequent revisions.
SVOCs Semi-Volatile Organic Compounds.
TAL Target Analyte List.
TCL Target Compound List.
VOCs Volatile Organic Compounds.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING SURROGATE RECOVERIES
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Parameter	*Sample ID*	*Surrogate*	*Surrogate Recovery (percent)*	*Control Limits (percent)*	*Analytes*	*Sample Results*	*Units*	*Qualifier*
Volatiles	SUMP1SED	Toluene-d8	0	48-185	1,1-Dichloroethene	12000	µg/Kg	J
		Bromofluorobenzene	336	59-120	1,2-Dichloroethene	49000	µg/Kg	J
					Tetrachloroethene	1700	µg/Kg	J
					Xylene	98	µg/Kg	J
	SUMP2SED	Bromofluorobenzene	132	59-120	Trichloroethene	4700	µg/Kg	J
					Tetrachloroethene	4J	µg/Kg	*

Notes:

* Sample results previously qualified as estimated by laboratory.

J Associated value is estimated.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Parameter	*Blank ID/ Date*	*Analyte*	*Blank Result*	*Sample ID*	*Sample Result*	*Qualified Sample Result*	*Units*
Semi-Volatiles	02/07/99	bis(2-Ethylhexyl)phthalate	2J	GW-1	2J	ND 10	µg/L
				GW-2	4J	ND 10	µg/L
				GW-2S	2J	ND 10	µg/L
				GW-3	1J	ND 10	µg/L
				GW-4	9J	ND 10	µg/L
				GW-4S	8J	ND 10	µg/L
				GW-4D	12	ND 12	µg/L
				GW-6	4J	ND 10	µg/L
				GW-6S	4J	ND 10	µg/L
Metals	02/05/99	Aluminum	23.9	GW-4	105	ND 105	µg/L
				SUMP1W	49.3	ND 49.3	µg/L
				SUMP2W	28.4	ND 28.4	µg/L
		Thallium	3.6	GW-1	2.5	ND 2.5	µg/L
				GW-2	1.8	ND 1.8	µg/L
				GW-2S	3.5	ND 3.5	µg/L
				GW-3	1.2	ND 1.2	µg/L
				GW-4	2.8	ND 2.8	µg/L
				GW-4S	3.0	ND 3.0	µg/L
				GW-4D	3.5	ND 3.5	µg/L
				GW-6	1.9	ND 1.9	µg/L
				GW-6S	2.3	ND 2.3	µg/L
		Thallium	3.6	SUMP1W	2.7	ND 2.7	µg/L
				SUMP2W	2.8	ND 2.8	µg/L

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Parameter	*Blank ID/ Date*	*Analyte*	*Blank Result*	*Sample ID*	*Sample Result*	*Qualified Sample Result*	*Units*
Metals	02/05/99	Zinc	6.1	GW-1	8.5	ND 8.5	µg/L
				GW-2	10.0	ND 10.0	µg/L
				GW-2S	10.9	ND 10.9	µg/L
				GW-3	13.5	ND 13.5	µg/L
				GW-4	6.5	ND 6.5	µg/L
				GW-4S	17.9	ND 17.9	µg/L
				GW-4D	6.0	ND 6.0	µg/L
				GW-6	9.8	ND 9.8	µg/L
				GW-6S	19.1	ND 19.1	µg/L
				SUMP1W	25.3	ND 25.3	µg/L

Notes:

Associated value is estimated.

ND Non-detect at associated value.

TABLE 6

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE (LCS) RESULTS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Parameter	*LCS Date*	*Analyte*	*Percent Recovery*	*Control Limits*	*Associated Sample ID*	*Sample Results*	*Units*	*Qualifier*
Volatiles	2/5/99	1,1,1-Trichloroethane	112	79-111	SUMP2W	6J	µg/L	*
		Trichloroethene	113	80-109	SUMP2W	4J	µg/L	*
	2/6/99	Trichloroethene	116	80-109	SUMP1SED	3300000	µg/Kg	J
		2-Butanone	71	79-111	SUMP1SED	ND 490000	µg/Kg	J
		2-Hexanone	71	74-116	SUMP1SED	ND 490000	µg/Kg	J

Notes:
* Sample results previously qualified as estimated by laboratory.
J Associated value is estimated.
ND Non-detect at associated value.

TABLE 7

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING SPIKE RECOVERIES
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Analyte	*Spike ID*	*Spike Recovery (percent)*	*Control Limits (percent)*	*Associated Samples*	*Sample Results*	*Qualifier*	*Units*
Antimony	S-121898-2	0	75-125	S-121898-1	ND 7.15	R	mg/Kg
				S-121898-2	ND 7.02	R	mg/Kg
				S-121898-3	ND 7.17	R	mg/Kg
				S-121898-4	ND 7.13	R	mg/Kg
				S-121898-5	ND 7.14	R	mg/Kg
	SUMP1SED	45	75-125	SUMP1SED	ND 11.3	J	mg/Kg
				SUMP2SED	ND 10.0	J	mg/Kg
Thallium	S-121898-2	69	75-125	S-121898-1	1.66	J	mg/Kg
				S-121898-2	1.30	J	mg/Kg
				S-121898-3	3.25	J	mg/Kg
				S-121898-4	2.27	J	mg/Kg
				S-121898-5	2.52	J	mg/Kg
Barium	SUMP1SED	212	75-125	SUMP1SED	415	J	mg/Kg
				SUMP2SED	880	J	mg/Kg
Mercury	SUMP1SED	132	75-125	SUMP1SED	2.1	J	mg/Kg
				SUMP2SED	1.1	J	mg/Kg
Nickel	SUMP1SED	67	75-125	SUMP1SED	135	J	mg/Kg
				SUMP2SED	145	J	mg/Kg

Notes:
J Associated value is estimated.
ND Non-detect at associated value.
R Data Rejected.

TABLE 8

QUALIFIED SAMPLE RESULTS DUE TO POOR LABORATORY DUPLICATE PRECISION
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Analyte	*Sample ID*	*Original Result*	*Duplicate Result*	*RPD*	*RPD Control Limit*	*Associated Sample IDs*	*Sample Results*	*Qualifier*	*Units*
Chromium	SUMP1SED	542	1510	95	0-35	SUMP1SED	542	J	mg/Kg
						SUMP2SED	118	J	mg/Kg
Copper	SUMP1SED	771	1430	60	0-35	SUMP1SED	771	J	mg/Kg
						SUMP2SED	468	J	mg/Kg
Lead	SUMP1SED	4550	17500	117	0-35	SUMP1SED	4550	J	mg/Kg
						SUMP2SED	3440	J	mg/Kg

Notes:
J Associated value is estimated.
RPD Relative Percent Difference.

TABLE 9

QUALIFIED SAMPLE RESULTS DUE TO CALIBRATION EXCEEDANCES
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

Parameter	*Sample ID*	*Compound*	*Sample Results*	*Units*	*Qualifier*
Volatiles	SUMP1SED	1,1-Dichloroethene	12000	µg/Kg	J
		1,2-Dichloroethene	49000	µg/Kg	J
		Tetrachloroethene	1700	µg/Kg	J
	SUMP2SED	Trichloroethene	4700	µg/Kg	J

Notes:
J Associated value is estimated.

APPENDIX B

ANALYTICAL DATA QUALITY ASSESSMENT AND VALIDATION

ANALYTICAL DATA ASSESSMENT AND VALIDATION
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
DECEMBER 1998 AND FEBRUARY 1999

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1.0 INTRODUCTION

The following document details an assessment and validation of analytical results reported by Columbia Analytical Services (CAS) and H2M Labs, Inc. (H2M) for soil, sediment, and water samples collected at the Wurlitzer Site in December 1998 and February 1999. Sampling and analysis summaries are presented in Tables 1A and 1B. Samples were analyzed using the methods specified in Table 3.

Summaries of the analytical data are presented in Tables 2A, 2B, and 2C. The Quality Assurance/Quality Control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods and the documents entitled:

i) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA 540/R-94-012, February 1994; and

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", EPA 540/R-94-013, February 1994.

The data quality assessment and validation presented in the following subsections are performed based on information obtained from final data sheets including surrogate, method blank, blank spike, matrix spike, and duplicate results.

2.0 SAMPLE HOLDING TIMES

Sample holding time criteria are specified in Table 3. Samples were extracted and/or analyzed within the required holding times with the exception of the target compound list (TCL) volatile organic compounds (VOCs) analysis of the soils collected in December 1998. These analyses were performed 5 to 6 days after the recommended holding time. All associated sample results were qualified as estimated in Table 2A to reflect a potential low bias.

All samples were properly preserved and maintained at 4°C (±2°C) after collection and at the laboratory.

3.0 SURROGATE SPIKE RECOVERIES - ORGANICS

In accordance with the methods employed, all samples, blanks, and standards analyzed for TCL VOCs and semi-volatile organic compounds (SVOCs) were spiked with surrogate compounds prior to sample extraction and/or analysis.

All SVOC and most VOC sample surrogate recoveries met the acceptance criteria.

Outlying VOC surrogate recoveries were reported for samples SUMP1SED and SUMP2SED. One high VOC surrogate recovery was reported for sample SUMP2SED, and all associated detected sample results were qualified as estimated to reflect a potential high bias (see Table 4). Non-detect data were not impacted by the indicated high bias.

One high VOC surrogate recovery and one extremely low VOC surrogate recovery were reported for sample SUMP1SED. All non-detect data were reported from a subsequent sample dilution with acceptable recoveries, and no qualification of these results was necessary. Associated detected sample data were qualified as estimated (see Table 4).

4.0 LABORATORY BLANK ANALYSES

The purpose of assessing the results of laboratory blank analyses is to determine the existence and magnitude of sample contamination introduced during analysis. Method blanks are prepared from deionized water and analyzed as samples.

For this study, method blanks were analyzed at a minimum frequency of one per analytical batch.

4.1 ORGANICS

Most method blank results were non-detect. Methylene chloride, trichloroethene, and bis(2-ethylhexyl)phthalate (BEHP) were present in some laboratory blanks. All associated methylene chloride results were non-detect, and no qualification of the data was necessary. No trichloroethene sample results were associated with the contaminated blanks. All BEHP results for the groundwater samples were qualified as non-detect (see Table 5).

4.2 METALS

Most metal method blank results were non-detect. Various metals were present in the method and calibration blanks. Most sample results were either non-detect or significantly greater in concentration, and no qualification of the data was necessary. Sample results impacted by contaminated laboratory blanks were qualified as non-detect (see Table 5).