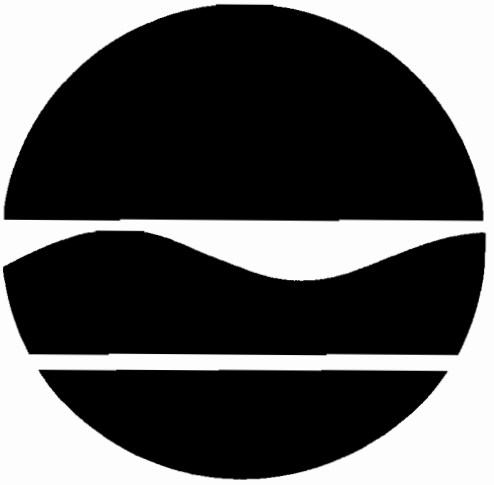
Copy 1

WURLITZER - AREA A SITE

North Tonawanda (C), Niagara County, New York
Site No. 932041

ADDITIONAL FIELD INVESTIGATION OF OCTOBER 2000

January 2002



Prepared by:

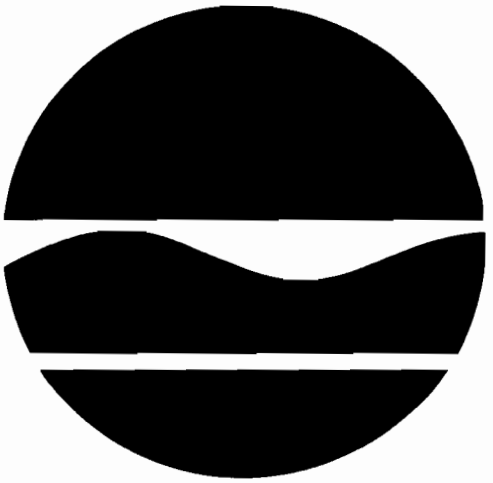
Region 9
Division of Environmental Remediation
New York State Department of Environmental Conservation

WURLITZER - AREA A SITE

North Tonawanda (C), Niagara County, New York
Site No. 932041

ADDITIONAL FIELD INVESTIGATION OF OCTOBER 2000

January 2002



Prepared by:

Region 9
Division of Environmental Remediation
New York State Department of Environmental Conservation

ADDITIONAL FIELD INVESTIGATION OF OCTOBER 2000

Irr Supply Centers, Inc
Wurlitzer Area A
Site No. 932041

North Tonawanda(C), Niagara County

Background

Pursuant to an Order on Consent executed between the Department and the current site owner, Irr Supply Centers, Inc., a Supplemental Environmental Investigation of their portion of Area A of the Wurlitzer Site was conducted in 1999. The purpose of this investigation was to evaluate areas of this property identified in the Department's April 1992 Phase II Investigation report, in order to determine if the disposal of hazardous waste had occurred there. The results of the 1999 supplemental investigation are contained in the Conestoga-Rovers & Associates (CRA) "Supplemental Environmental Investigation" Report dated July 1999.

The 1999 site investigation did not reveal evidence of hazardous waste disposal in any of the areas examined. However, review by this Department, the New York State Department of Health (NYSDOH) and the Niagara County Health Department (NCHD) led to a request of Irr Supply for testing in the filled area located northwest of the former railroad siding, which is now a right-of-way held by the Oxbow Company (Oxbow ROW). This additional assessment was conducted in October 2000. The analytical results, which consist of a laboratory report transmitted via a March 28, 2001 letter from Geomatrix (McIntosh to Hyden), are provided in Appendix A. This report presents conclusions and recommendations, based on these analyses.

Purpose

The purpose of the October 2000 Investigation was to complement previous site assessment efforts, address "data gaps" from earlier investigations and, when combined with the previous investigations, present a complete assessment of Area A of the Wurlitzer Site. With this completed assessment, the Department can determine whether Area A should be listed as an inactive hazardous waste disposal site, pursuant to the New York State Superfund Program.

Field Sampling

The October 2000 Investigation consisted of collection and subsequent laboratory analysis of subsurface waste/fill samples obtained from four locations in Area A. As shown in Figures 1 and 2, these locations are in an area northwest of the Oxbow ROW. The sample locations, selected in concert with NYSDOH and NCHD, were based on physical evidence of fill material placement. The composite samples were collected by CRA and Geomatrix. At each of the four locations, samples were taken from several random hand auger borings, approximately one to two feet deep, and then composited . These four composite samples were analyzed for metals and semi-volatile organic compounds (SVOCs), utilizing H2M Laboratories.

Sampling Results

The analytical results provided in Appendix A of this report are tabulated and discussed in this section. For comparison purposes, cleanup goals specified in Technical and Administrative Guidance Memorandum (TAGM) No. 4046 were used as a general basis for determining the significance of contaminants found in the composite subsurface samples. Those contaminants found above TAGM levels are summarized in Tables 1 (SVOCs) and 2 (metals) below.

While four SVOCs were found above TAGM levels, the concentrations of three compounds, benzo(a)anthracene, chrysene, and benzo(a)pyrene, are notable at Locations A-3 and A-4. Given the observed presence of ash-like fill material found throughout the area investigated, such concentrations are not unexpected.

Table 1
Subsurface Soil/Fill Sample Results
SVOCs (ug/kg)

Compound	TAGM Goal	Area A-1	Area A-2	Area A-3	Area A-4
Benzo(a)anthracene	224	470	210	2200	3700
Chrysene	400	360	230	1400	2500
Benzo(b)Fluoranthene	1,100	220	71	830	2000
Benzo(a)Pyrene	61	170	81	510	1100

- shaded areas indicate exceedance of TAGM 4046 guidance values

As depicted in Table 2, several metals were detected above TAGM screening levels in all four areas sampled. To further evaluate the significance of these results, soil background concentrations taken from the December 1998 Wurlitzer Area B Remedial Investigation report (average of four background samples) and "typical" soil concentration ranges for Western New York, New York State and the Eastern US are also presented in the table.

Table 2
Subsurface Soil Sample Results
Metals (mg/kg)

Compound	TAGM Goal	Area A-1	Area A-2	Area A-3	Area A-4	Typical Soil Concentrations			
						Wurlitzer Area B	Western New York	New York State	Eastern US
Arsenic	7.5 or SB	11.3	10.6	10	108			3 - 12	< 0.1 - 73
Barium	300 or SB	362	227	173	73.2	98		15 - 600	10 - 1500
Beryllium	0.16 or SB	1.2	0.86	0.84	0.63			1 - 1.75	< 1 - 7
Cadmium	1 or SB	7.7	2	3.6	1.5	1	1 - 9	0.01 - 2	
Copper	25 or SB	523	44	435	199		7 - 40	< 1 - 15	< 1- 700
Lead	500	533	26.1	174	96.3				
Mercury	0.1	0.23	ND	ND	0.15				
Nickel	13 or SB	19.1	14.2	49.7	22.2		10 - 40	0.5 - 25	< 5 - 700
Selenium	2 or SB	1.5	2.1	0.81	5.7			< 0.1 - 0.125	< 0.1 - 3.9
Zinc	20 or SB	460	108	274	214	128	23 - 160	37 - 60	< 5 - 2900

- shaded areas indicate exceedance of TAGM 4046 guidance values
- SB denotes "Site Background"

The comparison of the analyses for metals of the four composite samples to the screening criteria tabulated in Table 2 (TAGM 4046 guidance and, where available, "typical"background levels) are summarized in Table 3.

Table 3 Exceedance of Screening Criteria				
Metal	TAGM 4046 Guidance (frequency of exceedance)*		"Typical" Background (frequency of exceedance)**	
Arsenic	Exceeded at all locations	4 of 4	A-1, A -2 and A-3 within Statewide Range A-4 exceeds all ranges	1 of 4
Barium	Exceeded at A-1	1 of 4	All locations within Statewide Range	0 of 4
Beryllium	Exceeded at all locations	4 of 4	All locations within Statewide Range	0 of 4
Copper	Exceeded at all locations	4 of 4	All locations within Eastern United States Range	0 of 4
Lead	Exceeded at A-1	1of 4	n/a	n/a
Mercury	Exceeded at A-1 and A-4	2 of 4	n/a	n/a
Nickel	Exceeded at all locations	4 of 4	A-1, A-2 and A-4 within Statewide Range; A-3 within Eastern United States Range	0 of 4
Selenium	Exceeded at A-2 and -4	2 of 4	A-2 within Eastern United States Range; A-4 exceeds all background ranges	1 of 4
Zinc	Exceeded at all locations	4 of 4	A-2 within Western NY Range; All other locations within Eastern US Range	0 of 4

* frequency of exceedance = number of samples above TAGM 4046 per total number of samples
** frequency of exceedance = number of samples above all "typical" background values per total no. of samples

While the sampling data indicates the impacts of past industrial use and filling activities in the supplemental study area, the overall level of contamination as reflected in Tables 1, 2 and 3 does not suggest that wide-spread and highly contaminated waste/fill exists in this area of investigation.

Presence of Hazardous Waste

While the presence of waste/fill in the investigation area is confirmed by this field sampling and analysis, an evaluation as to whether these materials are hazardous waste pursuant to NYCRR Part 371 is necessary. The 1992 Phase II Investigation did not conclude that the disposal of "listed" hazardous waste occurred in the supplemental study area. Given the field observations of the waste/fill in Area A, and the significantly long time period since its placement, the most likely means by which the material would be classified as "hazardous waste" would be via TCLP test results,

rendering the material characteristically hazardous. No TCLP testing was conducted as part of the October 2000 project. However, as part of the RI for Wurlitzer Area B, leachability testing was conducted on samples from several test pits.

Based on field observation, the ash waste/fill material found in Area A was similar to the samples from Test Pits 2 and 11 (TP-2 and TP-11 respectively) of the RI for Area B. The sample from TP-2 was analyzed for SVOC's and metals; from TP-11, for TCLP. No TCLP data is available for TP-2 and no total contaminant data is available for TP-11.

In general, the contaminants found in the Area A waste/fill samples were similar to those in the Area B ash samples, but existed at lower concentrations in Area A. The TCLP levels of samples taken from TP-11 did not exceed regulatory thresholds. These observations are presented in Table 4, which compares the Area A contaminant ranges to those of Test Pit No. 2 (TP-2) and lists the TCLP data for Test Pit No. 11 (TP-11) samples of waste/fill collected in Area B as part of the RI..

Table 4
Comparison of Area A and Area B Fill Material

Contaminant	Area A Concentration Ranges (mg/kg)	Area B TP - 2 Concentration (mg/kg)	Comparison: Concentrations of Area A Samples to TP - 2 Samples	Part 371 TCLP Regulatory Threshold (mg/l)	Area B TCLP Conc. TP-11 (mg/l)
Benzo(a) anthracene	210 - 3700	8800	All Area A Levels < TP-2 Level	n/a	
Chrysene	230 - 2500	10300	All Area A Levels < TP-2 Level	n/a	
Benzo(b)Flouranthene	71 - 2000	25 700	All Area A Levels < TP-2 Level	n/a	
Benzo(a)Pyrene	81 - 1100	26,200	All Area A Levels < TP-2 Level	n/a	
Arsenic	10 - 108	15.2	Sample A-4 Level > TP-2 Level	5	0.012
Barium	73 - 362	406	All Area A Levels < TP-2 Level	100	0.124
Beryllium	0.6 - 1.2	1.0	Sample A-1 Level > TP-2 Level		
Copper	44 - 523	875	All Area A Levels < TP-2 Level		
Lead	26 - 533	398	Sample A-1 Level > TP-2 Level	5	0.007
Mercury	ND - 0.23	0.43	All Area A Levels < TP-2 Level	0.2	ND
Nickel	14.2 - 49.7	1050	All Area A Levels < TP-2 Level		
Selenium	0.8 - 5.7	ND	All Area A Levels > TP-2 Level	1	ND
Zinc	108 - 460	2190	All Area A Levels < TP-2 Level		

ND - not detected
n/a - not applicable, no threshold given
< - less than
> - greater than

The findings of this comparison can be summarized as follows::

- waste/fill in Area A appears similar to comparative samples taken from Area B,
- contaminant concentrations in Area A samples are less than comparative samples taken from Area B, and
- Area B samples did not exceed TCLP regulatory thresholds.

Based on these observations, the Area A waste/fill material is not a "listed" hazardous waste pursuant to NYCRR Part 361. This conclusion also supports a similar finding during the Phase II investigation, wherein EP Toxicity testing of samples taken from Area A did not show exceedences of "hazardous" criteria.

Conclusions

Based on the October 2000 field investigation of Area A northwest of the Oxbow ROW and the analytical results of waste/fill samples taken therefrom, the following conclusions are made:

- The portion of Area A northwest of the Oxbow ROW contains ash-like fill materials.
- Elevated levels of SVOCs consisting of four polynuclear aromatic hydrocarbons (PAHs) and several metals were present in the waste/fill materials.
- PAHs found in samples taken from Area A-4 were significantly higher than in the other three samples. A similar distinction of the distribution of metals cannot be drawn.
- The waste/fill materials in Area A northwest of the Oxbow ROW is not "hazardous waste" as defined in NYCRR Part 371.

FIGURES 1 and 2

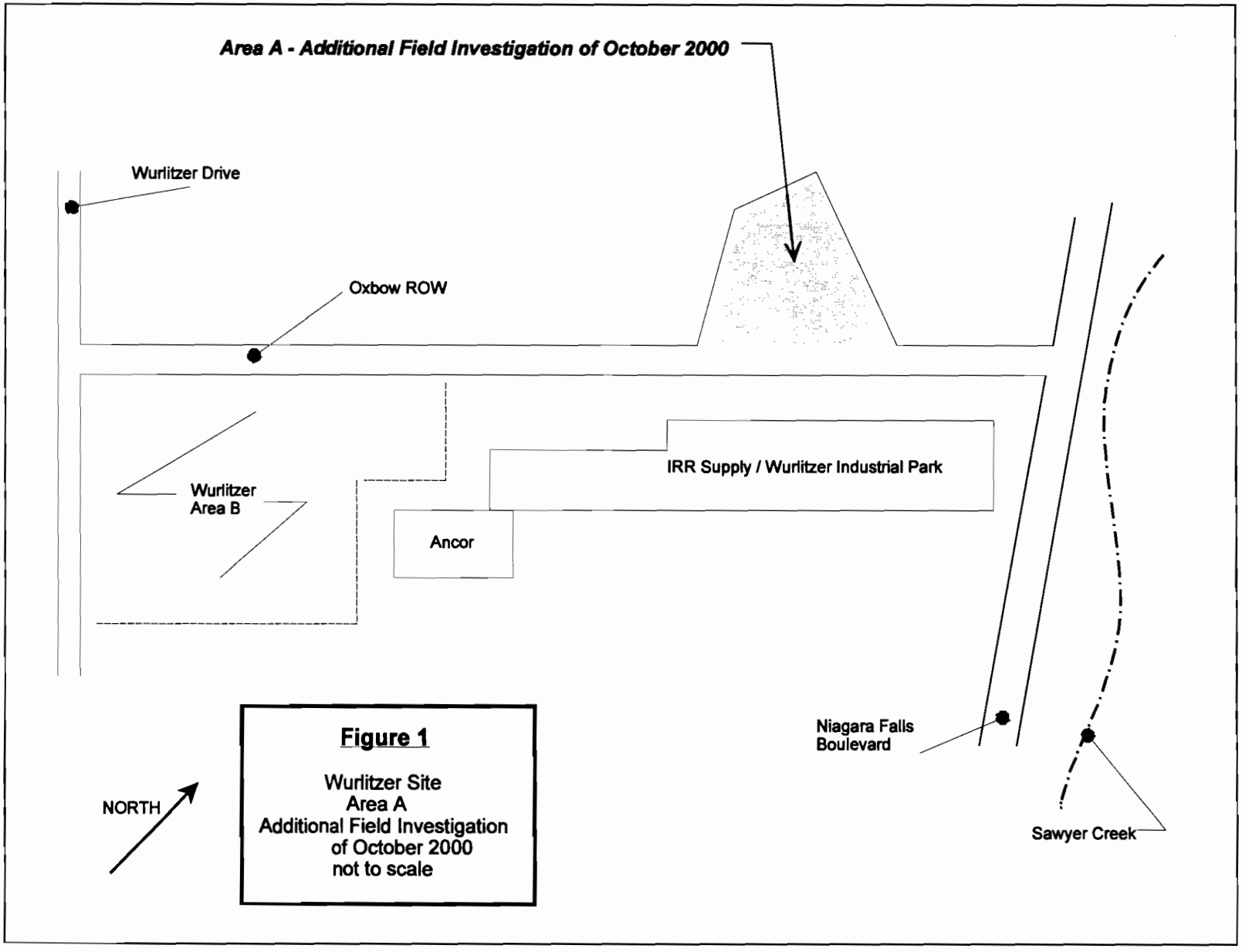
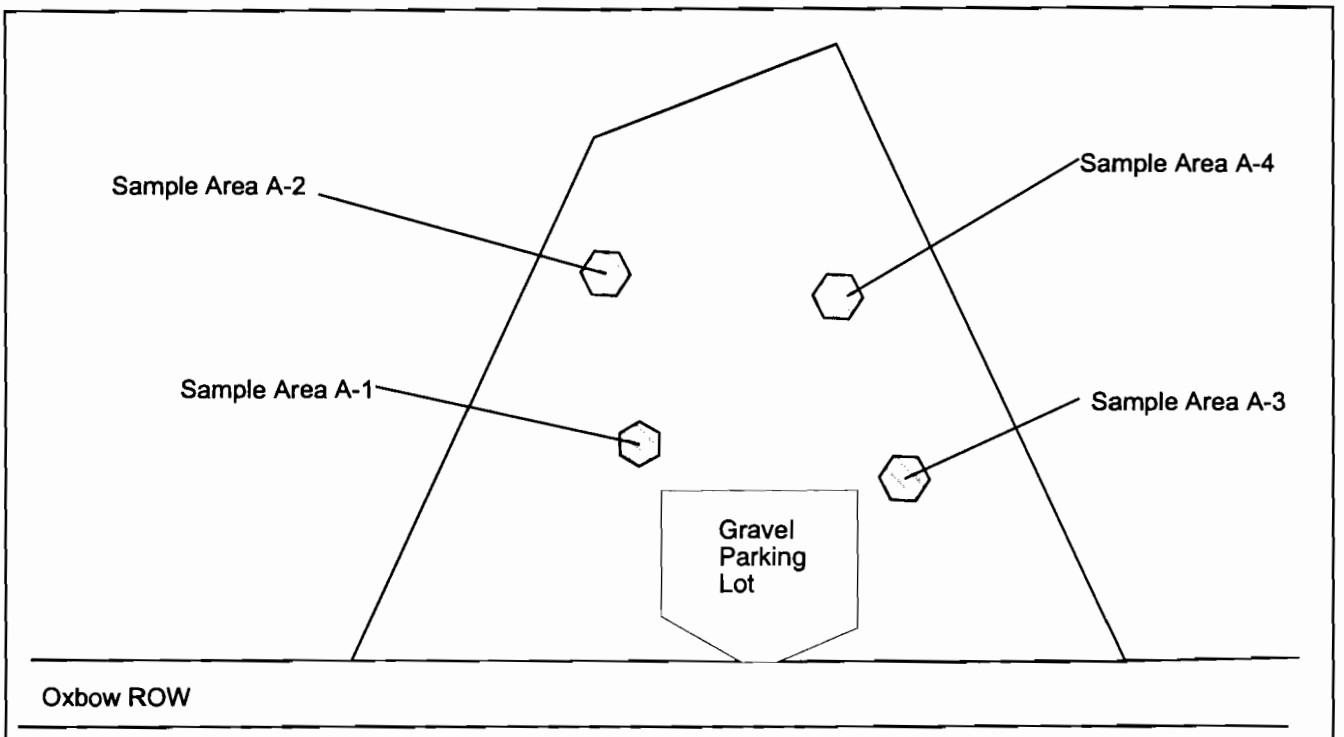


Figure 1

Wurlitzer Site
Area A
Additional Field Investigation
of October 2000
not to scale



Sample Location Description

A-1 mounded area
A-2 exposed waste/fill behind 957 Fairmont
A-3 fill area nw of parking lot
A-4 mounded area

NORTH

Figure 2

Wurlitzer Site
Area A
Additional Field Investigation
of October 2000
not to scale

APPENDIX A

Analytical Results (Geomatrix)

338 Harris Hill Road, Suite 201
Williamsville, New York 14221
(716) 565-0624 • FAX (716) 565-0625

GEOMATRIX

March 28, 2001

Mr. John W. Hyden, Ph.D., P.E.
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203

Subject: IRR Supply Centers, Inc.
Supplemental Soil Sampling: Area A

Dear Mr. Hayden:

On behalf of IRR Supply Centers, Inc., Geomatrix Consultants, Inc. (Geomatrix) is pleased to present the attached results of supplemental soil sampling conducted at the Wurlitzer Industrial Park in North Tonawanda, New York. The sampling was conducted in response to comments from the New York State Department of Health (NYSDOH) and Niagara County Health Department (NCHD) on the Supplemental Investigation Report prepared by Conestoga-Rovers & Associates (CRA).

Representatives of IRR (Kelly McIntosh (Geomatrix) and Andrew Kisiel (CRA)), NYSDEC (John Hyden), NYSDOH (Matthew Forcucci) and NCHD (Paul Dickey) met at the Site on October 19, 2000. Sample locations, analytical parameters and sampling methods were agreed to in the field prior to sampling. Sampling was conducted by Mssrs. McIntosh and Kisiel with direction and oversight provided by Mssrs. Hyden, Forcucci and Dickey. Samples of fill materials were obtained from four locations in the area referred to by NYSDEC as "Area A". Pre-cleaned, dedicated hand augers were used to collect the samples. At each location, several samples were collected and composited in stainless steel mixing bowls. Samples were analyzed for TCL SVOCs and TAL metals by H2M Labs, Inc.

The analytical results are included in the attached Analytical Data Assessment and Validation Report prepared by CRA. Analytical results are within the ranges typically encountered in urban areas. The highest concentrations, found in sample A-4, were primarily polyaromatic hydrocarbons (PAHs) which were found to be present at concentrations up to a maximum of 3.7 mg/kg (benzo(a)anthracene).

The results of the supplemental sampling show no significant areas of elevated chemical concentrations above those typically encountered in urban environments. Consequently, we have concluded that no additional investigation or remediation of "Area A" is warranted. If you would like to discuss these results or our conclusions please do not hesitate to contact me at (716) 565-0624.

Sincerely yours,
GEOMATRIX CONSULTANTS, INC.

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

cc: R. Kennedy
M. Stetter

ANALYTICAL DATA ASSESSMENT AND VALIDATION
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

TABLE OF CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

The following document details an assessment and validation of analytical results reported by H2M Labs, Inc. (H2M) for soil samples collected at the Wurlitzer Site in October 2000. A sampling and analysis summary is presented in Table 1. Samples were analyzed using the methods specified in Table 3.

A summary of the analytical data is presented in Table 2. 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 were 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.

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 semi-volatile organic compounds (SVOCs) were spiked with surrogate compounds prior to sample extraction and/or analysis.

All SVOC sample surrogate recoveries met the acceptance criteria.

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

All method blank results were non-detect.

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 4).

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

Most SVOC LCS recoveries were acceptable for the compounds of interest. Associated sample results impacted by outlying SVOC LCS recoveries were qualified as estimated (see Table 5).

5.2 METALS

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

6.0 MATRIX SPIKE (MS) ANALYSES

The recoveries of MS analyses are used to assess the analytical accuracy achieved on individual sample matrices. For this investigation, MS analyses were not requested. The lab performed a matrix spike on the sample from Area A-1. Most MS recoveries were acceptable. All remaining metals results associated with outlying MS recoveries were qualified as estimated (see Table 6).

7.0 DUPLICATE ANALYSES - METALS

To assess analytical precision, metals samples are prepared and analyzed in duplicate.

For this investigation, duplicate analyses were performed on the sample chosen for MS analyses. Most results demonstrated acceptable precision. Results associated with outlying duplicate analyses were qualified as estimated (see Table 7).

8.0 ICP SERIAL DILUTION - METALS

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per 20 investigative samples is analyzed at a five-fold dilution. For samples yielding analyte concentrations greater than 50 times the IDL, the serial dilution results must agree within 10 percent of the original results.

Serial dilutions were performed at the required frequency. Several serial dilution analyses showed potential interference. Associated sample results of significant concentration were qualified as estimated (see Table 8).

9.0 CONCLUSION

Based on the assessment detailed in the foregoing, the data produced by H2M Laboratories are acceptable with the qualifications noted herein.

TABLES

TABLE 1

SAMPLE COLLECTION SUMMARY
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Sample ID	*Location*	*Date*	*Time*	*Analyses*
Area A -1	A-1	10/19/00	0930	TCL SVOCs, TAL metals
Area A -2	A-2	10/19/00	1000	TCL SVOCs, TAL metals
Area A -3	A-3	10/19/00	1015	TCL SVOCs, TAL metals
Area A -4	A-4	10/19/00	1030	TCL SVOCs, TAL metals

Notes:

MS Matrix Spike.
MSD Matrix Spike Duplicate.
SVOCs Semi-Volatile Organic Compounds.
TAL Target Analyte List.
TCL Target Compound List.

TABLE 2
ANALYTICAL RESULTS SUMMARY - SOIL
SUPPLEMENTAL ENVIRONMENTAL INVESIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

	Sample ID:	Area A-1	Area A-2	Area A-3	Area A-4
	Collection Date:	10/19/00	10/19/00	10/19/00	10/19/00
Parameters	*Units*				
TCL Semi-Volatiles					
Phenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
bis(2-Chloroethyl)ether	µg/Kg	ND 420	ND 430	ND 400	ND 470
2-Chlorophenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
1,3-Dichlorobenzene	µg/Kg	ND 420	ND 430	ND 400	ND 470
1,4-Dichlorobenzene	µg/Kg	ND 420	ND 430	ND 400	ND 470
1,2-Dichlorobenzene	µg/Kg	ND 420	ND 430	ND 400	ND 470
2-Methylphenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
2,2'-oxybis-(1-chloropropane)	µg/Kg	ND 420	ND 430	ND 400	ND 470
4-Methylphenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
N-Nitroso-di-n-propylamine	µg/Kg	ND 420	ND 430	ND 400	ND 470
Hexachloroethane	µg/Kg	ND 420	ND 430	ND 400	ND 470
Nitrobenzene	µg/Kg	ND 420	ND 430	ND 400	ND 470
Isophorone	µg/Kg	ND 420	ND 430	ND 400	ND 470
2-Nitrophenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
2,4-Dimethylphenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
bis(2-Chloroethoxy)methane	µg/Kg	ND 420	ND 430	ND 400	ND 470
2,4-Dichlorophenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
1,2,4-Trichlorobenzene	µg/Kg	ND 420	ND 430	ND 400	ND 470
Naphthalene	µg/Kg	250 J	670	680	780
4-Chloroaniline	µg/Kg	ND 420	ND 430	ND 400	ND 470
Hexachlorobutadiene	µg/Kg	ND 420	ND 430	ND 400	ND 470
4-Chloro-3-methylphenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
2-Methylnaphthalene	µg/Kg	360 J	1000	640	1100
Hexachlorocyclopentadiene	µg/Kg	ND 420	ND 430	ND 400	ND 470
2,4,6-Trichlorophenol	µg/Kg	ND 420	ND 430	ND 400	ND 470
2,4,5-Trichlorophenol	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
2-Chloronaphthalene	µg/Kg	ND 420	ND 430	ND 400	ND 470
2-Nitroaniline	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
Dimethylphthalate	µg/Kg	ND 420	ND 430	ND 400	ND 470
Acenaphthylene	µg/Kg	74 J	ND 430	55 J	300 J
2,6-Dinitrotoluene	µg/Kg	ND 420	ND 430	ND 400	ND 470
3-Nitroaniline	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
Acenaphthene	µg/Kg	ND 420	ND 430	390 J	62 J

TABLE 2
ANALYTICAL RESULTS SUMMARY - SOIL
SUPPLEMENTAL ENVIRONMENTAL INVESIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

	Sample ID:	*Area A-1*	*Area A-2*	*Area A-3*	*Area A-4*
	Collection Date:	*10/19/00*	*10/19/00*	*10/19/00*	*10/19/00*
Parameters	*Units*				
TCL Semi-Volatiles (Cont'd.)					
2,4-Dinitrophenol	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
4-Nitrophenol	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
Dibenzofuran	µg/Kg	88 J	280 J	370 J	330 J
2,4-Dinitrotoluene	µg/Kg	ND 420	ND 430	ND 400	ND 470
Diethylphthalate	µg/Kg	ND 420	ND 430	ND 400	ND 470
Fluorene	µg/Kg	ND 420	53 J	410	120 J
4-Chlorophenyl-phenylether	µg/Kg	ND 420	ND 430	ND 400	ND 470
4-Nitroaniline	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
4,6-Dinitro-2-methylphenol	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
N-Nitrosodiphenylamine	µg/Kg	ND 420	ND 430	ND 400	ND 470
4-Bromophenyl-phenylether	µg/Kg	ND 420	ND 430	ND 400	ND 470
Hexachlorobenzene	µg/Kg	ND 420	ND 430	ND 400	ND 470
Pentachlorophenol	µg/Kg	ND 1000	ND 1100	ND 990	ND 1200
Phenanthrene	µg/Kg	330 J	630	2200	1200
Anthracene	µg/Kg	98 J	ND 430	760	350 J
Carbazole	µg/Kg	ND 420	ND 430	390 J	160 J
Di-n-Butylphthalate	µg/Kg	420	110 J	580	960
Fluoranthene	µg/Kg	500	170 J	2400	3100
Pyrene	µg/Kg	680	170 J	1800	2500
Butylbenzylphthalate	µg/Kg	ND 420	ND 430	ND 400	ND 470
Benzo(a)anthracene	µg/Kg	470 J	210 J	2200 J	3700 J
3,3'-Dichlorobenzidine	µg/Kg	ND 420	ND 430	ND 400	ND 470
Chrysene	µg/Kg	360 J	230 J	1400	2500
bis(2-Ethylhexyl)phthalate	µg/Kg	740 J	260 J	61 J	260 J
Di-n-Octylphthalate	µg/Kg	ND 420	ND 430	ND 400	ND 470
Benzo(b)fluoranthene	µg/Kg	220 J	71 J	830	2000
Benzo(k)fluoranthene	µg/Kg	240 J	75 J	680	1000
Benzo(a)pyrene	µg/Kg	170 J	81 J	510	1100
Indeno(1,2,3-cd)pyrene	µg/Kg	250 J	47 J	550	940
Dibenz(a,h)anthracene	µg/Kg	ND 420	ND 430	ND 400	ND 470
Benzo(g,h,i)perylene	µg/Kg	320 J	59 J	490	840

TABLE 2
ANALYTICAL RESULTS SUMMARY - SOIL
SUPPLEMENTAL ENVIRONMENTAL INVESIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

	Sample ID:	Area A-1	Area A-2	Area A-3	Area A-4
	Collection Date:	10/19/00	10/19/00	10/19/00	10/19/00
Parameters	Units				
TAL Metals					
Aluminum	mg/Kg	12800	9300	10200	7910
Antimony	mg/Kg	ND 0.63 J	ND 0.36 J	5.8 J	1.5 J
Arsenic	mg/Kg	11.3 J	10.6 J	10.0 J	108 J
Barium	mg/Kg	362	227	173	73.2
Beryllium	mg/Kg	1.2 J	0.86 J	0.84 J	0.63 J
Cadmium	mg/Kg	7.7 J	2 J	3.6 J	1.5 J
Calcium	mg/Kg	50400 J	13300 J	20800 J	11800 J
Chromium	mg/Kg	17.3	9.1	17.6	16.2
Cobalt	mg/Kg	5.4	5.2	5.8	8.7
Copper	mg/Kg	523 J	44 J	435 J	199 J
Iron	mg/Kg	19600 J	32200 J	20800 J	67600 J
Lead	mg/Kg	533 J	26.1 J	174 J	96.3 J
Magnesium	mg/Kg	6910 J	1210 J	3240 J	4210 J
Manganese	mg/Kg	634 J	103 J	345 J	387 J
Mercury	mg/Kg	0.23	ND 0.062	ND 0.052	0.15
Nickel	mg/Kg	19.1 J	14.2 J	49.7 J	22.2 J
Potassium	mg/Kg	1470	1020	784	837
Selenium	mg/Kg	1.5 J	2.1 J	0.81 J	5.7 J
Silver	mg/Kg	0.50	0.26	0.58	0.35
Sodium	mg/Kg	277	565	218	115
Thallium	mg/Kg	0.49	3.2	1.0	8.3
Vanadium	mg/Kg	16.9 J	18.8 J	17.7 J	19.7 J
Zinc	mg/Kg	460 J	108 J	274 J	214 J

Notes:

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
OCTOBER 2000

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

TABLE 4
QUALIFIED SAMPLE RESULTS DUE TO ANALYTICAL CONCENTRATIONS IN THE METHOD BLANKS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Parameter	*Analysis/Prep Date*	*Analyte*	*Blank Result*	*Sample ID*	*Sample Date*	*Sample Result*	*Qualifier*	*Units*
Metals	10/31/00	Antimony	0.219	Area A-1	10/19/00	0.63	ND	mg/Kg
				Area A-2	10/19/00	0.36	ND	mg/Kg

Notes:
ND Non-detect at associated value.

TABLE 5
QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE (LCS) RESULTS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Parameter	*LCS Date*	*Analyte*	*Percent Recovery*	*Control Limits*	*Associated Sample ID*	*Sample Results*	*Units*	*Qualifier*
SVOCs	10/21/00	Benzo(a)anthracene	137	48-120	Area A-1	470	µg/Kg	J
					Area A-2	210	µg/Kg	J
					Area A-3	2200	µg/Kg	J
					Area A-4	3700	µg/Kg	J
		bis(2-Ethylhexyl)phthalate	152	29-127	Area A-1	740	µg/Kg	J
					Area A-2	260	µg/Kg	J
					Area A-3	61	µg/Kg	J
					Area A-4	260	µg/Kg	J

Notes:
J Estimated.

TABLE 6
QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE RESULTS
SUPPLEMENTAL ENVIRONMENTAL INVESIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Parameter	*Analyte*	*% Recovery*	*Control Limits (%)*	*Associated Sample ID*	*Sample Results*	*Units*	*Qualifier*
Metals	Antimony	45	75-125	Area A-1	0.63	mg/Kg	J
				Area A-2	0.36	mg/Kg	J
				Area A-3	5.8	mg/Kg	J
				Area A-4	1.5	mg/Kg	J
	Arsenic	158	75-125	Area A-1	11.3	mg/Kg	J
				Area A-2	10.6	mg/Kg	J
				Area A-3	10.0	mg/Kg	J
				Area A-4	108	mg/Kg	J
	Cadmium	67	75-125	Area A-1	7.7	mg/Kg	J
				Area A-2	2	mg/Kg	J
				Area A-3	3.6	mg/Kg	J
				Area A-4	1.5	mg/Kg	J
	Selenium	135	75-125	Area A-1	1.5	mg/Kg	J
				Area A-2	2.1	mg/Kg	J
				Area A-3	0.81	mg/Kg	J
				Area A-4	5.7	mg/Kg	J

Notes:
J Estimated.

TABLE 7
QUALIFIED SAMPLE RESULTS DUE TO POOR LABORATORY DUPLICATE PRECISION
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Analyte	*Sample ID*	*Original Result*	*Duplicate Result*	*RPD*	*RPD Control Limit*	*Associated Sample IDs*	*Sample Results*	*Qualifier*	*Units*
Copper	Area A-1	523	121	125	35	Area A-1	523	J	mg/Kg
						Area A-2	44	J	mg/Kg
						Area A-3	435	J	mg/Kg
						Area A-4	199	J	mg/Kg

Notes:
J Estimated.
RPD Relative Pr rence.

TABLE 8
QUALIFIED SAMPLE RESULTS DUE TO OUTLYING SERIAL DILUTIONS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Analyte	Sample ID	%D	Control Limits (percent)	Associated Samples	Sample Results	Qualifier	Units
Beryllium	Area A-1	12.5	10	Area A-1	1.2	J	mg/Kg
				Area A-2	0.86	J	mg/Kg
				Area A-3	0.84	J	mg/Kg
				Area A-4	0.63	J	mg/Kg
Cadmium	Area A-1	16.5	10	Area A-1	7.7	J	mg/Kg
				Area A-2	2	J	mg/Kg
				Area A-3	3.6	J	mg/Kg
				Area A-4	1.5	J	mg/Kg
Calcium	Area A-1	16.7	10	Area A-1	50400	J	mg/Kg
				Area A-2	13300	J	mg/Kg
				Area A-3	20800	J	mg/Kg
				Area A-4	11800	J	mg/Kg
Iron	Area A-1	13.6	10	Area A-1	19600	J	mg/Kg
				Area A-2	32200	J	mg/Kg
				Area A-3	20800	J	mg/Kg
				Area A-4	67600	J	mg/Kg
Lead	Area A-1	15.7	10	Area A-1	533	J	mg/Kg
				Area A-2	26.1	J	mg/Kg
				Area A-3	174	J	mg/Kg
				Area A-4	96.3	J	mg/Kg
Magnesium	Area A-1	14.6	10	Area A-1	6910	J	mg/Kg
				Area A-2	1210	J	mg/Kg
				Area A-3	3240	J	mg/Kg
				Area A-4	4210	J	mg/Kg
Manganese	Area A-1	15.3	10	Area A-1	634	J	mg/Kg
				Area A-2	103	J	mg/Kg
				Area A-3	345	J	mg/Kg
				Area A-4	387	J	mg/Kg
Nickel	Area A-1	14.9	10	Area A-1	19.1	J	mg/Kg
				Area A-2	14.2	J	mg/Kg
				Area A-3	49.7	J	mg/Kg
				Area A-4	22.2	J	mg/Kg

TABLE 8
QUALIFIED SAMPLE RESULTS DUE TO OUTLYING SERIAL DILUTIONS
SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
WURLITZER SITE
TONAWANDA, NEW YORK
OCTOBER 2000

Analyte	Sample ID	%D	Control Limits (percent)	Associated Samples	Sample Results	Qualifier	Units
Vanadium	Area A-1	12.0	10	Area A-1	16.9	J	mg/Kg
				Area A-2	18.8	J	mg/Kg
				Area A-3	17.7	J	mg/Kg
				Area A-4	19.7	J	mg/Kg
Zinc	Area A-1	16.2	10	Area A-1	460	J	mg/Kg
				Area A-2	108	J	mg/Kg
				Area A-3	274	J	mg/Kg
				Area A-4	214	J	mg/Kg

Notes:
J Estimated.
%D Percent Difference.