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**PHASE II  
ENVIRONMENTAL SITE  
ASSESSMENT**

for

**191 GANSON STREET  
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK**

AFI Project H1025

Prepared for:

**WASTE MANAGEMENT OF NEW YORK**  
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East Rochester, New York 14445

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December 28, 1994

PHASE II REPORT - WMNY

December 28, 1994



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## 1.0 INTRODUCTION

AFI Environmental was retained by Waste Management to conduct a Phase II Investigation of the property located at 191 Ganson Street in Buffalo, New York. This property was the subject of a Phase I Environmental Site Assessment (ESA), performed by AFI Environmental (AFI), which identified several potential areas of environmental concerns (AEC's). Further investigation was conducted to assess the potential environmental impacts that may have occurred or were related to the AEC's. Specifically, AFI identified several AEC's which include, but may not be limited to, the following:

- o Numerous petroleum stained areas both in the garage areas and the staging/parking areas;
- o Soils in and around the area of the former gasoline underground storage tank (UST) were never sampled and analyzed to confirm that no leakage had occurred from the UST.
- o The fill materials utilized to backfill the dry docks north of the site, have been shown to contain elevated levels of VOCs, PCBs and metals. Additionally, groundwater in this area has also been shown to contain elevated levels of acetone, methylene chloride and metals.
- o Potential impacts on the site from contaminants in the Buffalo River.
- o Potential impacts on the site due to contaminants released on the adjacent properties.
- o Potential discharges, including petroleum products and other vehicle operational and maintenance products, into the combined sanitary/storm sewers on site.
- o Historical uses of the property for industrial purposes.
- o Potential impact to the soils and stormwater sewers in and around the staging areas from leakage of leachate from trucks and roll-offs during routine operations.

The Phase II investigation of the project site was conducted to assess whether the identified AEC's have resulted in environmental impacts on the site and to characterize groundwater beneath the site. The field aspects of this investigation involved the drilling of test borings, the installation of monitoring wells and the collection of soil and groundwater samples. Soil and groundwater samples obtained during this field program were submitted for chemical analyses to enable an evaluation of site conditions relative to regulatory policy. AFI has prepared this *Phase II Investigation Report* to summarize the field investigation; present the results of the chemical analysis of soil and groundwater samples; evaluate the analytical data



with respect to applicable regulatory standards and/or guidance values; and to identify potential sources of contamination. No attempt was made to determine the actual boundaries of contamination, if found.

## **2.0 SITE DESCRIPTION**

Figure 1 graphically depicts the property location on Ganson Street south of the intersection with Michigan Avenue in the City of Buffalo, Erie County, New York, which is included on the Buffalo SE NY - 7.5 minute quadrangle of the United States Geological Survey (USGS). The site is approximately 4.78 acre in size and contains one office building, one repair/maintenance garage, one detached office trailer, and gravel driveways and parking areas. The site is generally flat with a very slight slope to the east towards the Buffalo River. As shown on Figure 1, the elevation of the property is approximately 580 feet above mean sea level. Site drainage is accomplished by means of uncontrolled overland flow from the stone driveway and parking area to the east, and a series of four catch basins located in the north central portion of the site. These catch basins discharge to the Buffalo Sewer Authority combined stormwater/sanitary sewer system.

The site is currently owned by Downing Container Service, Inc. Figure 2 illustrates the current site plan. The property is bounded by Ganson Street to the west, Integrated Waste Systems, Inc. to the north, Roy Track, Inc. to the east, and General Portland, Inc. to the south and east. All the surrounding properties are industrial in nature.

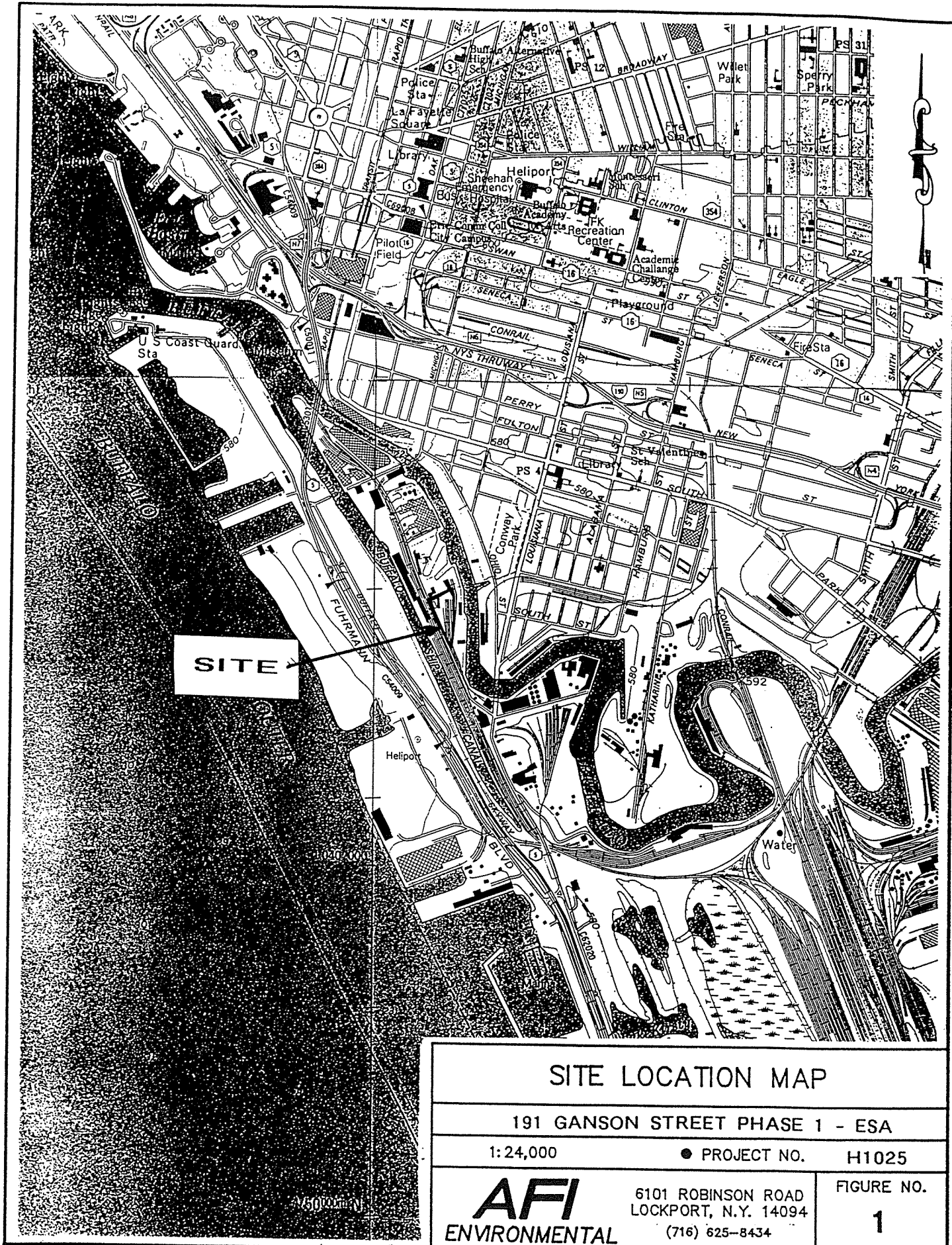
Current zoning maps were not available for the site, however, based on the nature of the businesses in the area, it is presumed that the site and surrounding properties are zoned heavy industrial. The site is serviced by municipal water and a combined sanitary/storm sewer system. Other utilities include natural gas from National Fuel and electric from Niagara Mohawk. The gas is routed to the main building through underground pipes from Ganson Street. Electric is delivered through overhead lines from Ganson Street.

According to the *Soil Survey of Erie County, New York*, the project site is characterized as having urban soils (Ud). This indicates that 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures. These areas are mostly nearly level to gently sloping.

Groundwater was encountered at the site in each of the monitoring wells. Static water levels measured in the monitoring wells ranged from 2.88 to 8.02 feet below ground surface. Regional groundwater flow direction, inferred from topographic maps, is generally towards the northwest and northeast to the discharge area represented by the Buffalo Ship Canal and the Buffalo River respectively. Local variations in groundwater flow, however, may occur in the site vicinity.

The Federal Emergency Management Association (FEMA) Flood Insurance Rate Map (Panel





**SITE LOCATION MAP**

**191 GANSON STREET PHASE 1 - ESA**

1:24,000

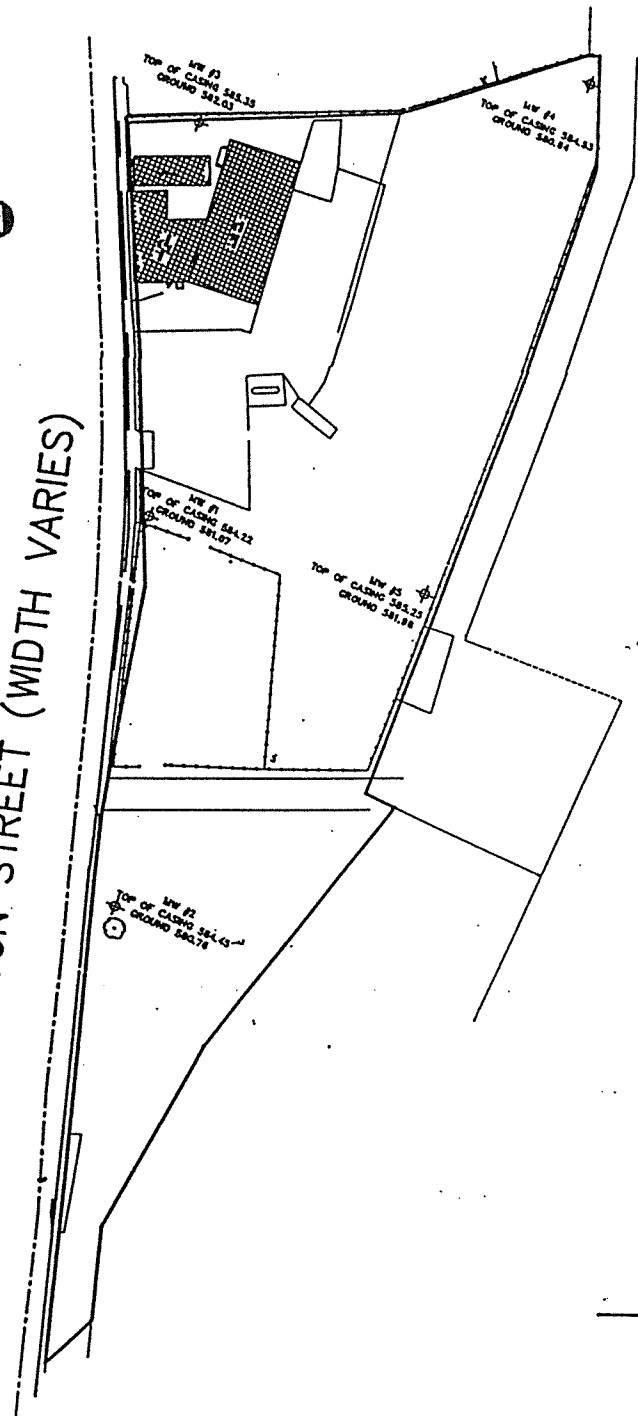
● PROJECT NO. H1025

**AFI**  
ENVIRONMENTAL

6101 ROBINSON ROAD  
LOCKPORT, N.Y. 14094  
(716) 625-8434

FIGURE NO.  
**1**

GANSON STREET (WIDTH VARIES)



**LEGEND**

- PROPERTY LINE
- ★ — MONITORING WELL
- ELEVATIONS SHOWN ARE REFERENCED TO NGVD'29

**WENDEL**  
 7405 CANAL ROAD, P.O. BOX 301  
 LOCKPORT N.Y. 14096 716-432-5493 716-825-8128

PART OF LOT	SEC.	TWP.	RNG.
CITY	BUFFALO	DATE	11/14/1994
COUNTY	ERIE, NY	SCALE	1"=100'

**SITE PLAN**

**191 GANSON STREET PHASE 2**

● PROJECT NO. **H 1025**

<b>AFI ENVIRONMENTAL</b>	6101 ROBINSON ROAD LOCKPORT, N.Y. 14094 (716) 625-8434	FIGURE NO.  2
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No. 360230 0020) was consulted to determine the flooding potential of this site. It was determined that the site is not located within the one-hundred year or five hundred year flood plains of any waterway, with the exception of the extreme southern tip of the property (< 10 percent), which slightly impinges on the five hundred year floodplain of the Buffalo River

### **3.0 PREVIOUS STUDIES**

#### **3.1 PHASE I ENVIRONMENTAL ASSESSMENT**

AFI Environmental performed a Phase I Environmental Assessment (ESA) of the project site in September, 1993. This ESA was conducted in accordance with the procedures outlined in American Society for Testing and Materials (ASTM) Practice E1527-93. As a result, the following items were disclosed:

- o There is one RCRIS-TS (Treatment, Storage and Disposal) facility located within 1.0 mile radius of the site. This facility has numerous violations associated with ignitable wastes, heavy metals, and chlorinated solvents.
- o The waste hauling operation occupying the subject property was identified as a RCRIS-LG large quantity generator of the following waste types:
  - a solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste (D001).
- o Additionally, one other RCRIS-LG large quantity generator is located within 0.25 mile radius of the site. This site generates the following waste types:
  - a solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste (D001).
  - a solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste (D002).
- o One RCRIS-SG small quantity generator is located within 0.25 mile radius of the site. This site generates the following waste types:
  - spent non-halogenated solvents (F003, F005); and
  - a solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste (D001).
- o The site itself is a listed petroleum bulk storage facility. Additionally, two petroleum bulk storage tank sites are located within a 0.25 mile radius of the subject property:



- o There are three LST (Leaking Storage Tanks) sites located within 0.5 mile radius of the subject property.

### **3.2 PHASE I CONCLUSIONS**

In accordance with the conclusions drawn in the Phase I ESA Report, the property owner (Waste Management of New York), in consultation with AFI Environmental, elected to implement a Phase II investigation to examine the subsurface of the subject property. The purpose of the investigation was to determine the presence or absence of contamination on the site.

### **4.0 METHODS OF INVESTIGATION**

The Phase II subsurface investigation was performed during the period of October 23 to November 2, 1994 with supplemental soil sampling conducted on December 6, 1994. This investigation was conducted in accordance with the investigation plan developed by AFI Environmental.

#### **4.1 DRILLING, SOIL SAMPLING AND WELL INSTALLATION**

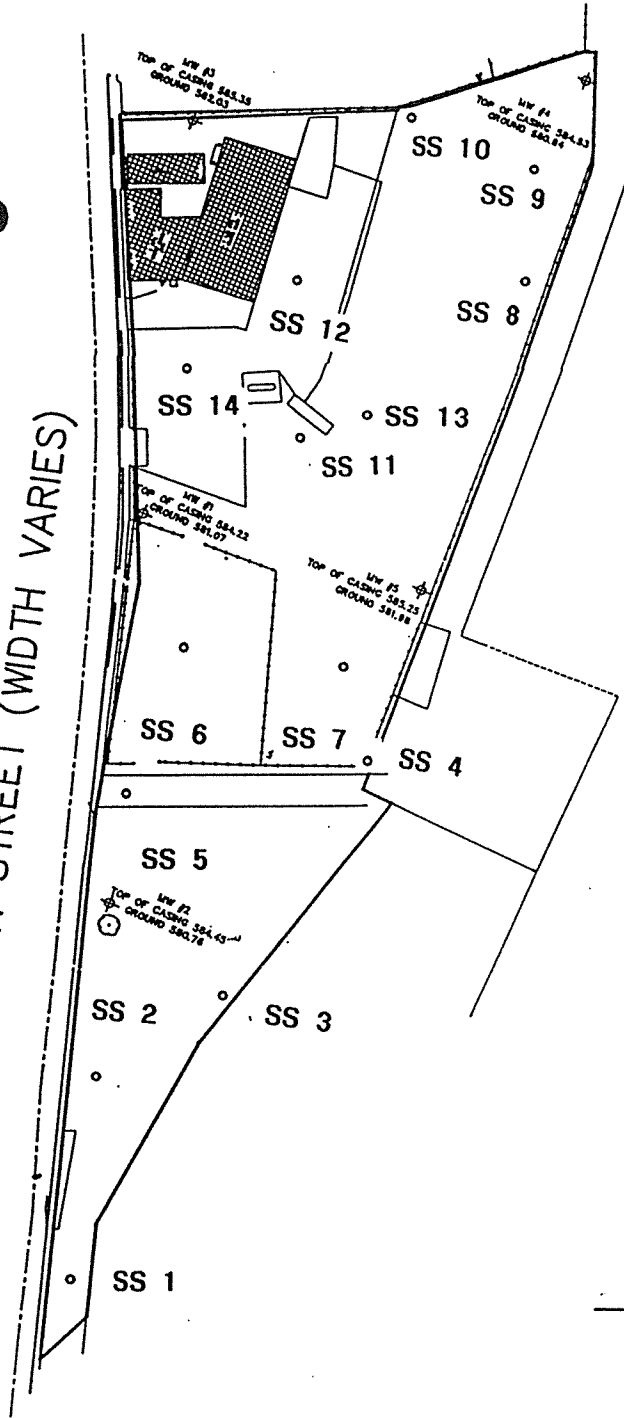
Drilling, soil sampling and well installation procedures employed during this investigation as outlined in the following sections, are consistent with the collection of high quality data for hydrogeologic studies, and were selected based upon the collective experience of AFI Environmental staff and the drilling contractor, Advanced Drilling Investigations (ADI) of Niagara Falls, New York. All field work was directly supervised and documented by a qualified AFI Environmental Geologist, and the methods utilized were intended to minimize the potential for cross contamination. Five (5) groundwater monitoring wells and ten (10) soil borings were completed, and three (3) sediment samples collected at the site, the locations of which are depicted by Figure 3.

##### **4.1.1 GROUNDWATER MONITORING WELLS**

Overburden consisted of clayey silt, fine sand, silty sand, silty clay, and silty fine sand that was saturated at approximately 4-7 feet below ground surface. No odor or visual evidence of contamination was noted during drilling operations. The following paragraphs summarize the drilling, installation and design of these wells.

The installation of the wells was performed using a Mobile B-57 Drill Rig to advance 4 1/2" ID hollow-stem augers through unconsolidated geologic materials to a depth of approximately seventeen (17) feet. Soil samples were obtained continuously throughout the total depth of the boring using 2" OD split-barrel samplers in accordance with ASTM-D1586 procedures for Standard Penetration Test (SPT). Auger drilling proceeded with a steel plug inserted at the bottom of the auger stem to prevent material from entering the hollow stem and

GANSON STREET (WIDTH VARIES)



**LEGEND**

- PROPERTY LINE
- ⊙ — MONITORING WELL
- ELEVATIONS SHOWN ARE REFERENCED TO NGVD'29
- SOIL SAMPLE

**SOIL SAMPLE LOCATIONS**

191 GANSON STREET PHASE 2

● PROJECT NO. H 1025

<b>WENDEL</b>			
<small>7405 CANAL ROAD, P.O. BOX 501 LOCKPORT, N.Y. 14095 716-433-5993 716-425-8226</small>			
PART OF LOT	SEC.	TWP.	RNG.
CITY	BUFFALO	DATE	11/14/1994
COUNTY	ERIE, NY	SCALE	1"=100'

<b>AFI</b> ENVIRONMENTAL	6101 ROBINSON ROAD LOCKPORT, N.Y. 14094 (716) 625-8434	FIGURE NO.  3
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to ensure accurate split-spoon sampling. The split-spoon sampler used was two (2) feet in length, unpainted, and equipped with a functional ball-check valve above the sample tube. The bottom of the sampling tube was equipped with a removable plastic "basket" retainer. The split-spoon was advanced through unconsolidated geologic materials at and below the bottom of the augers with a standard 140-pound hammer falling freely 30 inches. Blow counts were recorded for each six inches of penetration. Split-spoon samples were logged using the Unified Soil Classification System (USCS). Representative samples obtained from each split spoon were placed in appropriately labeled sample containers and immediately sealed with aluminum foil and screw on-cap. Field screening of soil samples obtained from split-spoons was conducted in accordance with the procedures outlined in Section 4.3.2.

Accurate test boring logs were prepared to document overburden stratigraphy and characteristics, depth to water, and all pertinent drilling observations.

Monitoring wells were installed immediately after auguring of the bore holes. The wells were constructed of two (2) inch diameter schedule 40, threaded, flush joint, PVC riser pipe and 10-slot PVC well screen. The screen was ten (10) feet in length, and fitted with threaded bottom plugs. The well screens were installed from approximately 7 feet below to 17 feet below the ground surface. A sand pack was gradually introduced to fill the annular space between the screen and the borehole wall. The sand pack extended from the bottom of the borehole to approximately one half (1/2) foot above the top of the screen. The sand pack consisted of washed, graded, silica sand with an average grain size and grain size distribution such that it was compatible with the screen slot size of 0.01 inches. A two (2) foot thick bentonite pellet seal was placed above the sand pack, and a cement/bentonite grout slurry extended from the top of the bentonite pellet seal to within one (1) foot of the surface. The well was completed by installing a six (6) inch steel casing with a stickup of approximately three (3) feet, with a locking cap. The grout was allowed to set up for 48 hours prior to well development. The well completion diagrams were prepared to document well construction details and material specifications and are included in Appendix A.

#### 4.1.2 SOIL BORINGS

Ten (10) soil borings were installed manually using a three (3) inch bucket auger. Soil samples obtained from the bucket auger, from a depth of 0.5' to 1.0', were immediately placed in properly labeled sample containers sealed with tin foil and a screw on cap for screening as described in section 4.3.2. Each soil boring was abandoned following the completion of auguring/sampling activities by backfilling with auger cuttings from the respective borehole.

#### 4.1.3 SEDIMENT SAMPLES

Three (3) sediment samples were collected from each of the three onsite catch basins. The samples were collected using a shovel to remove some material from the bottom of the catch basin. Each sediment sample obtained from the catch basins were immediately placed in properly labeled sample containers sealed with tin foil and a screw on cap for screening as



described in section 4.3.2. Excess material collected from the catch basins was returned to the bottom of the catch basins.

## **4.2 WELL DEVELOPMENT**

The following well development procedures were employed 48 hours after completion of the groundwater monitoring wells. This allowed the cement/bentonite grout sufficient time to set-up and enabled the wells to equilibrate. Prior to evacuation procedures the water level within the wells was measured with an audible signal, water level indicator to facilitate calculation of the volume of water within the well. Water was then evacuated from the wells using a decontaminated, plastic bailer. Well development continued until a minimum turbidity was achieved. All water withdrawn from the monitoring wells was properly contained within labeled, DOT approved 55 gallon drums to await proper disposal.

## **4.3 SAMPLE COLLECTION/SCREENING AND ANALYSIS**

The sample collection/screening and analysis program implemented at the project site involved the collection of one (1) groundwater sample from each monitoring well; as well as the field screening of soil and sediment samples to enable the selection of two (2) soil samples from the ten (10) soil borings and one (1) sediment sample for chemical analyses. All sample collection and screening measures were performed in accordance with accepted protocols by an experienced AFI Environmental Geologist. All samples were placed in appropriately labeled sample containers for transport under proper chain of custody records to Lozier Laboratories for chemical analyses. The following sections outline sample collection and screening procedures, and identify the analytical methods employed to chemically characterize the groundwater and soil samples.

### **4.3.1 GROUNDWATER**

After well development, the monitoring wells were allowed to equilibrate for 24 hours. The static water level within the monitoring wells were measured using an audible signal water level indicator. After calculating the volume of water contained within each well, purging was initiated. Purging was accomplished using decontaminated plastic bailers. Well purging continued until at least 3 well volumes were removed or a minimum of turbidity was obtained. All water withdrawn from the monitoring wells was properly contained within labeled, DOT approved 55 gallon drums to await proper disposal.

Groundwater sampling was performed within 24 hours after purging. The monitoring wells were sampled using decontaminated plastic bailers. The samples were placed in laboratory precleaned and prelabeled containers, appropriate preservatives were added, and the samples were placed on ice in a cooler for transport to Lozier Laboratories under proper chain of custody records. Five (5) groundwater samples underwent testing in accordance with EPA SW-846 3rd edition.



#### 4.3.2 SOIL

Soil samples obtained from split-spoons were screened for total organic vapors (TOVs) utilizing an HNu PID after equilibrating at room temperature for one (1) hour. After removing the screw on cap, the foil seal of the sample container was pierced with the probe of the PID, and a measurement was recorded. A summary of field screening results for VOCs is contained in Table #1. PID measurements were zero for all split spoon samples collected during monitoring well installation and ranged from 0 ppm to 0.7 ppm for the ten (10) soil and (3) three sediment samples.

Two (2) samples from the ten (10) soil borings and one (1) sediment sample from the three (3) drainage inlets were selected for chemical analysis based upon the results of field screening. The three (3) soil/sediment samples with the highest measured TOV concentration were placed in a laboratory precleaned and properly labeled sample containers and placed on ice in a cooler for transport under proper chain of custody records to Lozier Laboratories. All soil samples underwent testing in accordance with EPA SW-846 Method 8240 for VOCs, TCL Semi-VOCs by Method 8270, TCL Pesticides/PCBs by Method 8080, RCRA Metals by Method 6010/7000s , and Cyanide by Method 9012.

#### 4.4 DECONTAMINATION

All drilling equipment such as augers, bits and sampling equipment which came in contact with subsurface materials was decontaminated via steam cleaning before and after drilling activities at each borehole. Equipment decontamination consisted of the removal of all soils with a high pressure, low volume, steam and detergent wash. Split-spoon decontamination was performed between samples and consisted of a detergent wash and potable water rinse.

The AFI geologist supervising the field investigation ensured that all equipment was properly decontaminated prior to use at the site, between each borehole, and before leaving the site.

#### 4.5 CONTAINMENT OF WASTES

Drill cuttings from the installation of the monitoring wells were transferred into labeled DOT-approved 55 gallon drums to await proper disposal. Similarly, all decontamination fluids and liquids withdrawn from the groundwater monitoring wells during development, purging and sampling activities were contained within labeled DOT-approved 55 gallon drums to await proper disposal by the client.

### **5.0 ANALYTICAL RESULTS**

#### **5.1 SOIL**





The Lozier laboratory report containing the analytical results for the soil samples analyzed via EPA SW-846 Method(s) 8240, 8270, 8080, 6010/7000 and 9012 are presented in Appendix C. This report also contains the case narrative, laboratory quality assurance/quality control (QA/QC) data, and chain of custody records. An initial review of the data indicated that the holding times for the 8080 Pesticides/PCBs and the TCL Semi-VOCs 8270 soil samples were exceeded prior to analysis. These samples were destroyed and resampled on December 6, 1994. All data reported within this report was analyzed within the required holding times, laboratory blanks were free of contamination, and all QC data were acceptable. These data are summarized and discussed in Section 6.0.

## 5.2 GROUNDWATER

The results of the chemical analysis of the five (5) groundwater samples collected from the onsite monitoring wells are presented in Appendix D. Additionally, the case narrative, laboratory QA/QC data and chain of custody records for these samples are presented therein. All groundwater samples were analyzed within the required holding times, surrogate standard recoveries were within acceptable limits (except for the low acid recoveries due to matrix interference on method 8270 for samples 1,3,4,5 and sample 6 for method 8080), and laboratory blanks were free of contamination. Section 6.0 contains a summary and evaluation of these groundwater data.

## 6.0 CONTAMINATION ASSESSMENT

An evaluation of the data resulting from the chemical analysis of soil and groundwater samples collected from the project site, including data from previous studies, was performed with respect to the following:

- o Type of Contamination
- o Potential Sources of Contamination
- o Compliance with Applicable Regulatory Guidelines

The succeeding subsections provide an assessment of the subsurface conditions at the project site, based upon available data, and provide the foundation for the recommendations concerning further investigation and/or remediation of the site discussed in Section 8.0.

### 6.1 SOIL

Analytical results from the two (2) soil samples and one (1) sediment sample collected from the project site have indicated the presence of a number of volatile organic compounds (VOCs) and semi volatile organic compounds (SEMIVOCs) commonly associated with petroleum constituents, possibly from fuel oil. Table 2 presents a summary of these results in a comparative format which includes the guidance values for each parameter as specified in the NYSDEC publication: *Spill Technology and Remediation Series (STARS) Memo #1 and/or*



*NYSDEC Soil Cleanup Objectives and Cleanup levels TAGM (January 24, 1994).* As illustrated by Table #2, and discussed within the laboratory case narrative, all sediment samples were diluted, prior to analysis, due to the presence of a brown viscous petroleum hydrocarbon within the sample extract. The dilution of the sample raised the detection limits far above the NYSDEC guidance values by several orders of magnitude. Further, PCB-1260 was detected at all locations sampled and analyzed, with the highest concentration at location # 9.

Based upon the location from which soil samples containing significant concentrations of VOCs and SEMIVOCs were collected; one can assume that impacts to the soil near the former UST location (location #10) and the fueling/container staging area (location #11) has occurred as the results of minor spillage or leaks. This assumption is consistent with the field screening data presented in Table #1. A further review of the same table reveals that not all samples locations exhibited VOC's. This may indicate that the impacts from the petroleum releases to the soil is limited. This assumption is supported by the lack of VOC's during the screening of the split spoon samples and the lack of any VOCs in the groundwater samples collected from the site. Therefore one could assume that not all areas of the site are contaminated with petroleum constituents.

## 6.2 GROUNDWATER

The chemical analysis of groundwater samples collected from the overburden monitoring wells installed on the site, did not indicate the presence of petroleum constituents in exceedance of NYSDEC guidance values. These data are summarized in Table #3. Based on a comparison with applicable guidance values established by the NYSDEC STARS Memo #1 and NYSDEC TAGM dated January 24, 1994, it appears that none of the contaminants encountered in the soil/sediments have entered the groundwater at any of the areas monitored. Further, it appears that contaminants originating from areas off-site are not migrating on-site via the groundwater flow system and that onsite contaminants are not migrating offsite via the groundwater system.

## 7.0 CONCLUSIONS

AFI Environmental collected a total of three (3) soil/sediment and five (5) groundwater samples from the project site for analysis pursuant to NYSDEC Petroleum-Contaminated Soil Guidance Policy. The resulting analytical data was assessed to determine if contaminated soil was present and to characterize groundwater quality. In general, contaminated soil was encountered in varying degrees in the areas sampled. In this case we don't know that the values exceed the NYSDEC requirements because of the analytical method selected for analysis. It is possible that some of the particular constituent levels could exceed the NYSDEC STARS limits, but this is unknown because TVLP analysis was not performed. The area of the former UST (sample location #10) demonstrated higher levels for VOCs and SEMIVOCs, than the truck fueling/waste container staging area (sample location #11). However, the sludge/sediment sample (sample location # 14) collected from the surface water runoff collection inlet was highest of all, especially for Acetone and Toluene (39,000 and 62,400 ppb respectfully). PCB-1260,



normally of low mobility, was detected in all samples, with the highest value recorded in the staging/refueling area. PCBs may be resulting from fill brought on-site prior to Downing Container's existence, or it maybe a result of current activity and made mobil via the liquid petroleum fraction in the soils.

Groundwater samples collected from the five (5) overburden monitoring wells were clean. No contravention of NYSDEC guidance values for drinking water standards, in the areas monitored, has occurred. The placement of the monitoring wells near the periphery of the site indicates that no contaminants are entering or leaving the site via the groundwater flow system of the overburden, in the areas monitored.

## **8.0 RECOMMENDATIONS**

Based upon the analytical data generated during the course of this investigation and a review of NYSDEC Petroleum-Contaminated Soil Guidance Policy, AFI Environmental recommends that a more extensive soil/sediment investigation be conducted. The objective of this program, would be to determine the concentrations, distribution (horizontal and vertical) and source of petroleum and PCB-1260 constituents in the soil. Once the boundaries, source and extent of the constituents, are defined, a corrective action program could be implemented. This would allow remediation of the site soils to within levels that are protective of human health and the environment.

However, recognizing that the site is located in a highly industrialized area and that the site is not currently leaching constituents into the groundwater or offsite via groundwater, a combination of testing, soil remediation, and paving with asphalt, concrete, or other impermeable semi-permanent material may warrant consideration.

The ultimate selection of the remedial method should be based upon further soil investigation and a number of parameters, including but not limited to effectiveness, potential impacts to human health and the environment, cost, and compatibility with the current commercial nature of the site. AFI also recommends that the NYSDEC be consulted regarding acceptable clean-up levels at the site, as well as the means by which these objectives will be achieved; once additional data has been collected and reviewed.

## **9.0 LIMITATIONS**

This report is based upon the application of scientific principles and professional judgement to certain facts with resultant subjective interpretations. Professional judgements expressed herein are based on the facts currently available within the limits of the existing data, scope of services, budget and schedule. To the extent that more definitive conclusions are desired by the client than are warranted by the current available facts, it is specifically AFI



Environmental's intent that the conclusions and recommendations stated herein will be intended as guidance and not necessarily a firm course of action except where explicitly stated as such. AFI makes no warranties, expressed or implied including without limitation, warranties as to merchantability or fitness of a particular purpose. Furthermore, the information provided in this report is not to be construed as legal advice. This investigation and report have been conducted and prepared on behalf of and for the exclusive use of Waste Management of New York, Downing Container et al. who may distribute it at their discretion.



**TABLE 1**  
**SUMMARY OF FIELD SCREENING RESULTS**

BORING LOCATION ID NUMBER	DEPTH BELOW GROUND SURFACE								
	0'-2'	2'-4'	4'-6'	6'-8'	8'-10'	10'-12'	12'-14'	14'-16'	16'-18'
	TOTAL ORGANIC VAPORS (TOV'S) MEASURED BY PID (PPM)								
MW-1	0	0	0	0	0	0	0	0	0
MW-2	0	0	0	0	0	0	0	0	0
MW-3	0	0	0	0	0	0	0	0	0
SOIL SAMPLE LOCATION	0.5'- 1.0'								
SS-1	0								
SS-2	0								
SS-3	0								
SS-4	0								
SS-5	0								
SS-6	0.2								
SS-7	0.2								
SS-8	0								
SS-9	0								
SS-10 (A)	0.7								
SS-11 (A)	2.5								
SS-12*	0.2								
SS-13*	0.2								
SS-14* (A)	0.2								

\* SEDIMENT/SLUDGE Sample from drainage inlet.

(A) These samples were sent out for analysis.



**TABLE 2**  
**SUMMARY OF ANALYTICAL RESULTS**  
**FOR**  
**SOIL SAMPLES**

SAMPLE NUMBER			S-1	S-2	S-3
LOCATION			SS-10	SS-11	SS-14
DEPTH BELOW GROUND SURFACE			0'-1'	0'-1'	SEDIM
SUBSTANCE <small>Analysis performed by method 8270.</small>	NYSDEC GUIDANCE VALUES (PPB)*	NYSDEC ALLOWABLE SOIL CONCEN (PPM)**	CONCENTRATIONS (PPB)		
Acenaphthene	20	.9	< 700	< 720	< 1900
Acenphylene	20	.41	< 700	< 720	< 1900
Benzdine	.002	N/A	< 1500	< 1600	< 3900
Benzo(a)Anthracene	.002	.03	< 2900	< 700	< 1900
Benzo(a)Pyrene	.002	.11	2700	< 700	< 1900
Benzo(a)Flouranthene	.002	.011	3000	< 700	< 1900
Benzo(ghi)Perylene	5	8.0	2200	800	< 1900
Benzo(k)Flouranthene	.002	1.1	2000	< 700	< 1900
Biz(2-ethylhexyl) Phthalate	50	4.35	800	1200	50,000
Chrysene	.002	.004	2500	< 700	< 1900
Dibenzo(a,h) Anthracene	50	1.650	1000	< 700	< 1900
3,3'-Dichlorobenzidine	N/A	N/A	< 1300	< 1400	< 3900
Di-N-Butyl Phthalate	50	.081	6700	3000	< 1900
Flouranthene	50	19	3600	< 700	19,000
Indeno-(1,2,3,-c,d) Pyrene	.002	.032	1900	< 700	< 1900
Phenanthrene	50	2.20	3400	800	23000
Pyrene	50	6.65	5000	1000	25,000

\*,\*\* Reference NYSDEC TAGM- determination of Soil Cleanup Objectives Jan. 24, 1994.



**TABLE 2**  
**SUMMARY OF ANALYTICAL RESULTS**  
**FOR**  
**SOIL SAMPLES (CONT)**

SAMPLE NUMBER		S-1	S-2	S-3	
LOCATION		SS-10	SS-11	SS-14	
DEPTH BELOW GROUND SURFACE		0'-1'	0'-1'	SEDIM	
SUBSTANCE	NYSDEC GUIDANCE VALUES (PPB)	NYSDEC ALLOWABLE SOIL CONCEN (PPM)*	CONCENTRATIONS (PPB)		
<small>Analysis performed by Method 8240.</small>					
Acetone	50	.0011	< 144	69	< 3,900
2-Butanone	50	0.3	< 144	< 50	< 39,000
Vinyl Acetate	N/A	N/A	< 144	< 52	< 39,000
4-Methyl-2-Pentanone	50	.01	< 144	< 52	< 39,000
Toluene	5	.015	< 14	< 5	62,400
2-Hexanone	50	N/A	< 144	< 52	< 39,000
Chlorobenzene	5	.017	< 14	< 5	< 3,900
Ethylbenzene	5	.055	< 14	< 5	< 3,900
Total Xylene	5	.012	< 29	< 11	< 7,800
Styrene	50	N/A	< 14	< 5	< 3,900
1,1,2,2-Tetrachloroethane	5	.006	< 14	< 5	< 3,900

\* NYSDEC Guidance Values from Jan 24, 1994 TAGM-Determination of Soil Cleanup Objectives and Cleanup Levels. HWR94-4046.

Allowable soil concentrations may be increased by a factor of 100 if the contamination is in the unsaturated zone above the water table. The value of 100 for correction is consistent with the logic used by EPA in its Dilution Attenuation Factor (DAF) approach for EP Toxicity and TCLP. (reference TAGM HWR94-4046).

Soil cleanup objectives are obtained by multiplying the allowable soil concentration by the correction factor.



**TABLE 2**  
**SUMMARY OF ANALYTICAL RESULTS**  
**FOR**  
**SOIL SAMPLES (CONT)**

SAMPLE NUMBER		S-1	S-2	S-3	
LOCATION		SS-10	SS-11	SS-14	
DEPTH BELOW GROUND SURFACE		0'-1'	0'-1'	SEDIM	
SUBSTANCE Analysis performed by Method 6010/7000.	NYSDEC GUIDANCE VALUES (PPB)	NYSDEC ALLOWABLE SOIL CONCEN (PPM)*	CONCENTRATIONS (PPB)		
Total Cyanide	N/A	SB	1.44	0.91	2.39
Arsenic	N/A	7.5/ SB	35.3	5.58	3.96
Barium	N/A	300/SB	350	179	324
Cadmium	N/A	1/SB	<2.45	<2.34	7.22
Chromium	N/A	10/SB	36.6	19.5	31.0
Lead	N/A	SB	393	51.6	131
Mercury	N/A	0.1	0.13	0.09	0.22
Selenium	N/A	2/SB	<0.47	<0.46	<0.31
Silver	N/A	SB	<2.38	<2.33	2.68
Analysis by Method 8080 PCB-1260	0.1	.1	250	6,700	340

\* Reference NYSDEC TAGM- Determination of Soil Cleanup Objectives and Cleanup Levels Jan. 24, 1994 HWR 94-4046.





**TABLE 3**  
**SUMMARY OF ANALYTICAL TEST RESULTS**  
**FOR**  
**GROUNDWATER**

Sample Number			S-1	S-2	S-3	S-4	S-5
Location			MW -1	MW -2	MW -3	MW -4	M- 5
Water surface depth below ground surface			5.1'	7.1'	5.8'	2.9'	5.9
Substance Analyzed	METHOD	NYSDEC Guidance Value (ppb)**	Concentrations (ppb)				
Benzene	8240	0.7	<5	<5	<5	<5	<5
Toluene	8240	5	<5	<5	<5	<5	<5
Ethylbenzene	8240	5	<5	<5	<5	<5	<5
Chlorobenzene	8240	5	<5	<5	<5	<5	<5
Total Xylene	8240	5	10*	10*	10*	10*	10*
Chloroethane	8240	50	10*	10*	10*	10*	10*
Acetone	8240	50	50*	50*	50*	50*	50*
2- Butanone	8240	50	50*	50*	50*	50*	50*
4-Methyl-2-Pentanone	8240	50	50*	50*	50*	50*	50*
Styrene	8240	5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	8240	5	<5	<5	<5	<5	<5
Naphthalene	8270	10	<5	<5	<5	<5	<5
Benzo(a)Anthracene	8270	.002	<5	<5	<5	<5	<5
Benzo(a)Pyrene	8270	.002	<5	<5	<5	<5	<5
Floranthene	8270	50	<5	<5	<5	<5	<5
Chrysene	8270	.002	<5	<5	<5	<5	<5

NOTES:       \*       All value are less than stated value  
                 \*\*       TCLP Extraction Guidance Value for Gasoline Contaminated Soil as specified in  
                              the STARS Memo #1 prepared by the NYSDEC.